Appendix 1
Twenty-seven Reports of Randomized Controlled Trials, Published from 1973 to 2008, Assessing the Impact of an Intervention on Gender Bias in the Evaluation of Job Applicants*

| Study, year, reference no. | Intervention | Outcome variable | Study design | Study participants | No. of participants | Construct measured | Results | $P$ value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Biernat and <br> Fuegen, $2001^{11}$ <br> (Substudy 2) | Presence or absence of requirement to justify hiring decision and sign evaluation form | Gender differences in short-list and hiring selections for applicants with identical resumes | $2 \times 2 \times 2 \times 2$ <br> Participant gender (M,F) by accountability ( $\mathrm{Y} / \mathrm{N}$ ) by resume set (M,F) by decision (short list, hire) | College students told to short-list 3 applicants from 14 resumes ( 7 M , 7 F); then hire 1 of the 3 for mechanical engineering (male sextyped) position based on recommendation letter | 39 male <br> (M) 25 female <br> (F) | Effect of accountability expectation on choice of $M$ or $F$ candidate for male sex-typed job | - No difference in short-listing M or $F$ <br> - F applicants more likely to be short-listed than hired <br> - F students less likely to hire a F applicant <br> - No effect of accountability on short listing <br> - Both $M$ and $F$ chose to hire fewer women when held accountable | $\begin{array}{r} \text { NS } \\ P<.05 \\ P<.03 \\ \text { NS } \\ P<.06 \end{array}$ |
| Brescoll and Uhlmann, $2008^{21}$ |  |  |  | Adults with work-place experience randomly assigned to view a videotaped job interview |  | Effects of anger (a genderincongruent emotion) on evaluation of multiple work- related attributes |  |  |
|  | Substudy 1: <br> Expression of anger or sadness by job applicant in response to losing an account | Substudy 1: <br> Composite measure of status, recommended salary, competence (111); external or internal attribution of emotion | Substudy 1: $2 \times 2$ <br> Applicant gender (M,F) by emotion (anger, sadness) |  | $\begin{aligned} & \text { Substudy } \\ & 1: \\ & 39 \mathrm{M} \\ & 30 \mathrm{~F} \\ & (85 \% \\ & \text { white) } \end{aligned}$ |  | Substudy 1: <br> - Status, salary, and competence greater for angry vs sad $M$ <br> - Angry F lowest in status and competence <br> - F anger attributed to internal factors | $\begin{gathered} P<.05 \\ P<.05 \\ P<.05 \end{gathered}$ |
|  | Substudy 2: <br> Same as substudy 1 except no emotion rather than sadness for control and high (CEO) and low (assistant trainee) occupational ranks | Substudy 2: <br> Same as in substudy 1 with measure of being "in control" or "out of control" added | Substudy 2: $2 \times 2 \times 2$ <br> Applicant gender (M,F) by emotion (anger, no emotion) by occupation (high vs low rank) |  | ```Substudy 2: 70 M 110 F``` |  | Substudy 2: <br> - Status, salary, and competence all lower for angry F regardless of rank <br> - Angry high rank F less competent than all other targets <br> - Anger in F related to internal attribution of being out of control and this fully mediated relationship between anger and status | $\begin{gathered} P<.05 \\ P<.05 \\ P<.01 \end{gathered}$ |
|  | Substudy 3: <br> As in substudy 2 but with no information on occupational rank and added statement of external attribution for anger or none | Substudy 3: Same as in substudy 1 | Substudy 3: $2 \times 3$ <br> Applicant gender (M,F) by emotion (unexplained anger, explained anger, no emotion) |  | ```Substudy 3: 51 M 82 F``` |  | Substudy 3: <br> - Higher status and salary for angry M without external attribution vs M with no emotion or external attribution <br> - Higher status and salary but not competence for angry $F$ with vs without external attribution but still lower than F with no emotion <br> - Angry F with external attribution same as angry M in status, salary, and competence | $\begin{array}{r} P<.05 \\ P<.05 \\ \\ \text { NS } \end{array}$ |


| $\begin{aligned} & \text { Cann et al., } \\ & 1981^{32} \end{aligned}$ | Overall applicant rating or rating of separate qualifications varied in order; applicant physical attractiveness (pretested) also varied | Applicant qualifications (110), decision to hire (1-6); composite rating of 10 qualifications (each 1-10), selfassessment of applicant attractiveness on decisions | $2 \times 3 \times 2 \times 2$ <br> Applicant gender (M,F) by attractiveness (low, medium, high) by order of evaluation by participant gender (M,F) | College students randomly assigned to review 1 out of 24 job applicant with the order of rating separate qualifications either first or second | $\begin{aligned} & 96 \mathrm{M} \\ & 148 \mathrm{~F} \end{aligned}$ | Impact on summary judgments in hiring of forcing raters to attend to specific qualifications first | - No effect of applicant gender or attractiveness on overall ratings, but M and attractive applicants more likely to be hired <br> - Ratings of individual qualifications higher and more strongly correlated with hiring decision when made prior to overall rating <br> - Rating order affected hiring only for average attractive applicants: hiring more likely when overall ratings came first (no gender breakdown) <br> - Raters acknowledged influence of attractiveness | NS (overall); $P<.01$ (hiring) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | $P<.01$ <br> (qualifications) ( $P$ value not given for correlation) |
|  |  |  |  |  |  |  |  | $P<.05$ |
|  |  |  |  |  |  |  |  | $P<.0001$ |
| Dipboye et <br> al., $1977^{33}$ | Physical attractiveness (pretested) and qualifications of applicants varied | Willingness to hire (1-7), salary, and top candidate; rating of traits on adjectival scales | $2 \times 3 \times 2 \times 2 \times 3$ <br> Rater gender by rater attractiveness (low, moderate, high) by applicant qualifications (low, high) by applicant gender (M,F) by applicant attractiveness (low, moderate, high) | College students reviewed 12 randomly ordered resumes; Two other college students viewed raters through a oneway mirror and rated their attractiveness | 110 (white; no gender breakdown) | Impact of attractiveness on bias in hiring decisions | - Attractive, high qualified M most likely hired, highest salary, selected as top candidate <br> - $\quad \mathrm{M}$ more likely than F to be hired in all conditions except M raters for low-qualified $F$ applicants <br> - Unattractive M rated higher than unattractive $F$ <br> - No difference between moderately attractive M and F <br> - Attractiveness enhanced hiring only for highly qualified applicants <br> - Rater attractiveness had no effect <br> - Adjectival trait differences in M and F applicants aligned with gender stereotypes <br> - No difference in competence or intelligence $M$ vs $F$ <br> - Attractive applicants more favorable than unattractive on all traits except intelligence | $P<.05$ |
|  |  |  |  |  |  |  |  | $P<.05$ |
|  |  |  |  |  |  |  |  | $\begin{array}{r} P<.05 \\ \mathrm{NS} \end{array}$ |
|  |  |  |  |  |  |  |  | $P<.05$ |
|  |  |  |  |  |  |  |  | NS |
|  |  |  |  |  |  |  |  | $P<.05$ NS |
|  |  |  |  |  |  |  |  | $\begin{array}{r} P<.05 \text { (all } \\ \text { traits); NS } \\ \text { (intelligence) } \end{array}$ |
| Fuegen et al., $2004^{23}$ | Parental status of applicant varied | Ratings of applicant competence, job commitment, availability on job, gender ST behaviors; controls rated "ideal" workers | $2 \times 2 \times 2$ <br> Applicant gender (M,F) by parental status (Y/N) by participant gender (M,F) | Two samples of college students randomly to review resume in 1 of 4 conditions; Midwest sample was $90 \%$ white, 3.8\% Asian, 2.8\% African American, 2.8\% Hispanic; Eastern sample was 72.4\% white, 8\% African American, 4.6\% Asian, 13.9\% Hispanic, 1.1\% West Indian | 49 M <br> 58 F <br> (Midwestern sample); <br> 21 M <br> 66 F <br> (Eastern <br> sample) | The extent to which parenthood impacts employment standards for men and women | - No difference in competence, performance standards, hiring, promotion for nonparents regardless of gender | NS |
|  |  |  |  |  |  |  | - Availability: parents < nonparents; F parents < M parents | $P<.0001 ; P<$ |
|  |  |  |  |  |  |  | - Masc stereotype: parents < nonparents <br> - Fem. stereotype: no differences | $\begin{array}{r} P<.02 \\ N S \end{array}$ |
|  |  |  |  |  |  |  | - Parents of both genders less committed than nonparents; <br> - M rated F applicant more committed <br> - $\quad \mathrm{F}$ rated M applicant more committed | $\begin{aligned} & P<.05 \\ & P<.03 \\ & P=.06 \end{aligned}$ |
|  |  |  |  |  |  |  | - Hiring and promotion lower for F but not M parent | $P<.02$ |


|  |  |  |  |  |  |  | - Required performance standards and time commitment for hire: nonparents same, but F parent held to higher standards and $M$ parent held to lowest standards | $\begin{array}{r} \mathrm{NS} \\ \text { (nonparents) } \\ P<.01 \text { ( } \mathrm{F} \text { vs } \mathrm{M} \\ \text { parent) } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Futoran and Wyer, $1986^{34}$ | Gender of applicant was explicit or left ambiguous with a nongendered name (Pat, Chris) | Rating (0-5) of applicant suitability of 9 occupations (3 M sex-typed, 3 F sex-typed, 3 neutral) | $2 \times 2 \times 2$ <br> Applicant gender (M,F) by stereotype traits (masc, fem) by sextyped job (M,F) $2 \times 2$ <br> Stereotypic traits (masc, fem) by sextyped job (M,F) for gender-ambiguous applicant | College students randomly assigned to 1 of 6 groups: job suitability for M, F, ambiguous applicant when traits match or do not match job type | $\begin{aligned} & 134 \mathrm{M} \\ & 114 \mathrm{~F} \end{aligned}$ | Separate contribution of stereotypic gender traits and biological sex to ratings of job suitability | - Inference of gender in ambiguous condition no different for applicants with stereotypic M or stereotypic F traits <br> - Applicant assumed to be the gender of the sex-typed job <br> - When gender was explicit, both gender and traits contributed independently to judgment of job suitability <br> - When gender was inferred, (ambiguous) it was irrelevant and judgment of job suitability was based solely on applicants' traits | NS $P<.03$ |
|  |  |  |  |  |  |  |  | $P<.05$ |
|  |  |  |  |  |  |  |  | NS |
| $\begin{aligned} & \text { Glick et al., } \\ & 1988^{12} \end{aligned}$ | Type of stereotypic or counterstereotypic gender individuating information (unrelated to job) about applicants varied in otherwise identical resumes | Likelihood of interview for job rated 1-5; Personality trait inferences rated masc or fem 1-5 | $2 \times 3 \times 3$ <br> Applicant gender (M,F) by individuating | Upper level managers and business professionals rated 1 of 6 possible resumes, randomly assigned | 205 M <br> 5 F (44\% of those mailed surveys) | Ability of counterstereotypic individuating information to affect gender bias in hiring | - Individuating information matched personality inferences <br> - Applicants with masc traits more likely to be interviewed for all jobs <br> - Counterstereotypic information reduced trait rating bias, but bias favoring a match of job and gender remained | $P<.001$ |
|  |  |  | Information (masc, fem, neut as indicated by summer job, work- |  |  |  |  | $P<.05$ |
|  |  |  | study job, <br> extracurricular <br> activities) by job sex- <br> type (masc, fem, neut) |  |  |  |  | $P<.001$ |





|  |  |  |  |  |  |  | likely to be ranked number 1 with no gender difference | $\begin{array}{r} \text { ance), } \\ \text { NS (M vs F) } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Muchinsky and Harris, $1977^{24}$ | Scholastic standing and academic major varied for applicants for M, F, and neut sex-typed jobs | Rating (1-20) for hiring | $2 \times 2 \times 3 \times 3$ <br> Rater gender (M,F) by applicant gender (M,F), by scholastic standing (low, average, high) by job sex-type (M, F, neutral) | College students rated 24 applicants in random order (3 packets of 6 experimental +2 sham resumes grouped by major); explicit bias toward F supervisors measured | $\begin{aligned} & 50 \mathrm{M} \\ & 50 \mathrm{~F} \end{aligned}$ | Impact of qualifications on gender bias for sextyped employment | - M rated F applicants higher for F sex-typed job (day-care center worker); F gave higher ratings to F applicants for M (mechanical engineer) and neutral (copy editor) sex-typed jobs and to M applicants for F sex-typed job | $P<.025$ |
|  |  |  |  |  |  |  | - Higher ratings for F applicants applying for M sex-typed job <br> - F applicants with average or low scholastic standing rated higher than M for F sex-typed job <br> - M with average scholastic standing rated higher than F for neutral sex-typed job | $P<.025$ |
|  |  |  |  |  |  |  |  | $P<.01$ |
|  |  |  |  |  |  |  |  | $P<.01$ |
| Ng and Weisner,$2007^{31}$ | Presence or absence of employment equity directives | Choice of hire for M or F as 1 of 3 applicants for job as nurse (sextyped F job) or police officer (sextyped M job) | $2 \times 3 \times 2$ <br> Job (nurse, police) by qualifications of underrepresented gender (less, equal, more) by equity directive (low or high urgency) | Classes of college students randomly assigned to one of 6 conditions; students made two hiring decisions each:1 for nurse, 1 for police officer | $\begin{aligned} & \hline 191 \mathrm{M} \\ & 205 \mathrm{~F} \end{aligned}$ | Effect of equity directives on gender bias in hiring | - When underrepresented applicants less qualified, more M than $F$ hired <br> - When underrepresented applicants equally or more qualified, hiring for $\mathrm{M}=$ that for F <br> - Basic and stronger equity statements increased hiring of less qualified $M$ but not $F$ <br> - Equity directives and provision of employment equity information increased hiring of equally qualified $M$ and $F$ | $P<.05$ |
|  |  |  |  |  |  |  |  | NS |
|  |  |  |  |  |  |  |  | $\begin{gathered} P<.05, \\ P<.001 \end{gathered}$ |
|  |  |  |  |  |  |  |  | $P<.05$ |
| Renwick and Tosi, $1978{ }^{17}$ | Marital status and job-relevant educational background varied | Suitability (1-7) for each of two positions; most and least suitable | $5 \times 2 \times 2 \times 2 \times 5$ <br> Undergraduate major ( 5 choices) by graduate degree (MBA, MS) by job (traveling, home office) by applicant gender (M,F) by marital status (married, single, divorced, married with 2 children, divorced with 2 children) | Graduate students in Administration randomly assigned to review 10 resumes for 2 job descriptions | 64 M <br> 16 F <br> (39\% single, 54\% married, and 7\% divorced; 39\% parents) | Effect of jobrelevant education and marital status on gender bias in hiring | - No gender differences for any measures or choice of most suitable candidate <br> - Applicants more suitable with relevant majors or MBA <br> - Most suitable job applicant $=$ married M with 2 children with business major and MBA vs. least desirable $=$ divorced M with history major and MS <br> - Most suitable F applicant $=$ single, industrial sociology major and MBA vs least suitable F = single history major with MA <br> - No difference in most and least suitable $M$ and $F$ | NS |
|  |  |  |  |  |  |  |  | $P<.05$ |
|  |  |  |  |  |  |  |  | $P<.01$ |
|  |  |  |  |  |  |  |  | $P<.01$ |
|  |  |  |  |  |  |  |  | NS |
| Rosen and Mericle,$1979^{20}$ | Presence of weak or strong employee equity directives (including expectation of accountability) | Hiring recommendation (14), salary | $2 \times 2$ <br> Applicant gender (M,F) by equity directive (weak, strong) | Municipal administrators in managerial positions randomly assigned to review one applicant | $\begin{aligned} & 57 \mathrm{M} \\ & 11 \mathrm{~F} \end{aligned}$ | Effect of equity directives on gender bias in hiring | - No gender difference in hiring recommendations for weak or strong equity policy <br> - Lower salary recommended for F applicants with strong equity directives | NS |
|  |  |  |  |  |  |  |  | P<. 025 |



|  | "androgenous"\| <br> (e.g. "life is about being connected to other people") life philosophy statement read before viewing and rating highly agentic applicant | hireability | (agentic, androgynous) by job sex-typed (M,F) by rater gender (M,F) | (responses in direct, selfconfident manner); implicit bias and explicit gender bias assessed |  | agentic women applying for F sex-typed jobs | - Social skills: agentic $M>F$; androgynous M = F | $\begin{array}{r} P=.05 ; \\ \text { NS } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | - Hireability: androgynous M and F comparable; agentic M and F comparable for M sex-typed job but agentic $F$ less hireable than M for F sex-typed job | $\begin{array}{r} \text { NS (androgy- } \\ \text { nous); } \\ \text { NS (M sex- } \\ \text { typed); } \\ P<.05(F \\ \text { sex-typed) } \end{array}$ |
|  |  |  |  |  |  |  | - Raters with greater implicit (but not explicit) bias rated agentic F lower on social skills for $F$ sextyped job and rated agentic M as more hireable for $M$ sex-typed job | $P<.05$ |
| Sczesny and Stahlberg, $2002^{27}$ |  |  |  |  |  | Ability of olfactory cues to activate gender bias in hiring |  |  |
|  | Substudy 1 : <br> Pre-tested masc, fem, or no perfume applied to applications before rating | Substudy 1: <br> Decision to hire (Y/N), certainty of decision (1-5), scent detected ( $\mathrm{Y} / \mathrm{N}$ ) and how pleasant (1-5) | Substudy 1: $3 \times 2$ <br> Scent (masc, fem, none) by applicant gender (M,F) | Substudy 1 : <br> College students acting as personnel managers randomly assigned to review one applicant | $\begin{aligned} & \text { Substudy 1: } \\ & 37 \mathrm{M} \\ & 37 \mathrm{~F} \end{aligned}$ |  | Substudy 1: <br> - M and F applicants with masc scent hired with greater certainty than those with fem scent <br> - No perfume most likely to be hired | $P=.003$ |
|  |  |  |  |  |  |  |  | $P=.001$ |
|  | Substudy 2: <br> Same as substudy 1 but perfume on person rather than paper application | Substudy 2: <br> Same as substudy <br> 1 | Substudy 2: $3 \times 2 \times 2$ <br> Scent (M,F, none) by applicant gender (M,F) by rater gender (M,F) | Substudy 2: <br> College students randomly assigned to conduct a job interview for leadership position with scripted confederate | $\begin{aligned} & \text { Substudy } 2 \text { : } \\ & 57 \mathrm{M} \\ & 59 \mathrm{~F} \end{aligned}$ |  | Substudy 2: <br> - M and F applicants with masc scent hired with greater certainty than those with fem or no perfume <br> - Fem scent no different than no scent | $P<.05$ |
|  |  |  |  |  |  |  |  | NS |
| Sczesny and Kühnen, $2004^{28}$ | Rating of applicant with masc or fem appearance with or without concurrent attentional demand | Leadership competence on 10 items; certainty of decision to hire or not | $2 \times 2 \times 2 \times 2$ <br> Physical appearance (fem, masc) by applicant gender (M,F) by attentional demand (Y/N) by rater gender (M,F) (attractiveness and likeability as covariates) | College students randomly assigned to evaluate leadership competence of $1 / 12$ applicants (3 per condition) | $\begin{aligned} & 72 \mathrm{M} \\ & 72 \mathrm{~F} \end{aligned}$ | Separate effects of gendered physical appearance and biological sex on attribution of leadership competence and hiring | - Leadership competence higher for M \& F applicants rated attractive <br> - Without distraction: leadership competence greater for F; F (but not $M$ ) raters more certain to hire F <br> - With distraction: $\mathrm{M}=\mathrm{F}$ for leadership competence; F (but not $M$ ) raters more certain in hiring M <br> - Higher leadership competence for masc vs fem appearance (regardless of distraction or applicant gender) | $P<.01$ |
|  |  |  |  |  |  |  |  | $\begin{gathered} P<.05 \\ \text { (compe- } \\ \text { tence); } \\ P<.01 \\ \text { (hiring) } \end{gathered}$ |
|  |  |  |  |  |  |  |  | NS (competence); $P$ < .01 (hiring) |
| $\begin{aligned} & \hline \text { Smith et al., } \\ & 2005^{14} \end{aligned}$ | Presence or absence of employment discontinuities on resumes of prospective applicants | Recommend to interview (1-7) and further consideration (17); starting salary; summary scores for motivation and commitment; coded written | $2 \times 3$ <br> Applicant gender (M,F) by employment gap (none, single 9 months; three 12 weeks) by | 143 respondents out of 400 randomly selected members of human resource associations who were mailed one resume to review | 54\% F | Gender differences in the impact of discontinuous employment on hiring | - No gap in employment: $\mathrm{M}>\mathrm{F}$ salary; M = F for interview and consideration. | $\begin{array}{r} \hline P<.01 \\ \text { (salary); } \\ N S \\ \text { (interview } \\ \text { and } \\ \text { considera- } \\ \text { tion) } \end{array}$ |


*M, male; F, female; masc, masculine; fem, feminine; neut, neutral; MBA, Master in Business Administration.

