When Beauty Helps and When It Hurts: An Organizational Context Theory of Attractiveness Discrimination in Selection Decisions

Abstract

We propose and test a theory explaining how and why decision makers engage in attractiveness discrimination in selection decisions. We integrate status generalization with interdependence theories and contextualize attractiveness discrimination within interdependent relationships among decision makers and candidates. Drawing on status generalization theory, we propose that decision makers associate attractiveness with competence in male but not in female candidates. We then draw on interdependence theory to propose that cooperative and competitive interdependence result in opposing patterns of attractiveness discrimination. When decision makers expect to cooperate with the candidate, they perceive attractive male candidates as more capable cooperators and discriminate in their favor. When decision makers expect to compete with the candidate, they perceive attractive male candidates as more capable competitors, and discriminate against them. Four studies, using different samples, selection tasks, manipulations of candidate attractiveness, and manipulations of interdependence, found evidence consistent with the theory.

Keywords: selection decisions; attractiveness discrimination; status generalization theory; interdependence theory

That attractive people receive better treatment and outcomes in many domains of social life, including work, is almost a truism. Attractiveness discrimination, or differential treatment of individuals based on their physical appearance (Whitley & Kite, 2009), is pervasive in the modern workplace (Dipboye, Fromkin, & Wiback, 1975; Judge, Hurst, & Simon, 2009; Morrow, 1990). Attractiveness discrimination is particularly prevalent in selection decisions, defined as decisions "aimed at choosing people for the fulfillment of jobs" (Roe, 1998, p. 5). This is because, in selection situations, decision makers often encounter candidates for the first time and attractiveness has the greatest effect on person perception during initial impression formation (Feingold, 1992; Morrow, 1990). Attractiveness discrimination is troublesome because selection decisions based on criteria unrelated to work performance can lead to suboptimal staffing outcomes and threaten organizational success (Holtom, Mitchell, & Lee, 2006; Jawahar & Mattsson, 2005). Moreover, because selection decisions are among the most important determinants of career success (Gatewood, Feild, & Barrick, 2008), they are particularly relevant for the goal of social justice (Fassinger, 2008).

Several decades of research suggest that attractive candidates are generally preferred to equally qualified unattractive candidates (Dion, Berscheid, & Walster, 1972; Hosoda, Romero, & Coats, 2003). Hosoda and colleagues (2003) conducted a meta-analysis of attractiveness discrimination research and concluded that regardless of candidate sex, the type of task for which candidates are considered, the amount of job-relevant information about the candidates, or work experience of the decision makers, candidate's "physical attractiveness is always an asset" (p. 451).

Recent research challenges this view by showing that when candidates were of the same sex as the decision maker, attractive candidates were discriminated against (Agthe, Spörrle, & Maner, 2010; Luxen & Van De Vijver, 2006). These findings were interpreted

through an evolutionary intrasexual competition perspective, according to which attractive same-sex candidates are seen as a greater threat to decision makers' mating opportunities. These studies highlight an important but overlooked condition impacting selection decisions: Decision makers' personal outcomes are often not entirely independent from the candidate's.

In this research, we test the idea that the type of *task-related* interdependence (Katz & Kahn, 1978; Thompson, 1967) between the decision maker and the candidate can explain when and why decision makers discriminate in favor of or against attractive candidates. Figure 1 depicts the theory. We draw on status generalization theory and existing evidence to hypothesize that attractiveness is associated with perceived task-related competence of male but not female candidates. We then apply interdependence theory to propose that the two fundamental types of interdependence in organizations—cooperation and competition (Deutsch, 1949)—result in an opposing pattern of attractiveness discrimination. When decision makers expect to cooperate with a male candidate, they perceive attractive male candidates as more instrumental to their personal outcomes (more capable cooperators), and discriminate in their favor. When decision makers expect to compete with a male candidate, they perceive attractive male candidates as less instrumental to personal outcomes (more capable competitors), and discriminate against them. We test this theory across four studies, using different samples, selection tasks, manipulations of candidate attractiveness, and manipulations of interdependence.

[Insert Figure 1 about here]

Our results qualify the dominant conclusion that decision makers exhibit unvarying preference for attractive candidates (Hosoda et al., 2003; Mobius & Rosenblat, 2006). We show that taking into account the often overlooked role of the organizational context (cf. Johns, 2006) reveals the conditions under which candidate attractiveness can be an asset as well as a liability. Similarly, past explanations of attractiveness discrimination assumed that

decision makers' outcomes were independent from candidates' outcomes (e.g., Cann, Siegfried, & Pearce, 1981; Cash, Gillen, & Burns, 1977; Dipboye, Arvey, & Terpstra, 1977; Dipboye et al., 1975; Heilman & Saruwatari, 1979; Jawahar & Mattsson, 2005; Watkins & Johnston, 2000). We highlight that this assumption is often unrealistic because organizational members frequently select people they have to work with in the future (Edenborough, 2005; Harris, Brewster, & Sparrow, 2003; Hinds, Carley, Krackhardt, & Wholey, 2000).

We also complement societal-level theories focusing on interdependence between groups to explain stereotyping and discrimination, including realistic group conflict theory (Campbell, 1965; Sherif, Harvey, White, Hood, & Sherif, 1961) and the stereotype content model (Fiske, Cuddy, Glick, & Xu, 2002). These theories lead to the prediction that when a group is viewed favorably within society, its members are treated relatively more favorably. In contrast, we propose that even if attractive people enjoy a favorable perception at the societal level, they can be seen as less instrumental and be discriminated against when some degree of future competition *in an organization* is expected.

This point also highlights a more general contribution of our work: the focus on decisions makers' perception of the instrumentality of the candidate to themselves. Our theory casts discrimination in selection decisions as a subjectively rational behavior (Arrow, 1973; Phelps, 1972) . In contrast, the majority of extant research viewed discrimination as the prejudice-driven, affective reaction (Whitley & Kite, 2009). As we note previously, research showing decision makers discriminate against same-sex candidates as a result of intrasexual competition processes (e.g., Agthe et al., 2010; Luxen & Van De Vijver, 2006) is an exception. Yet, this perspective cannot account for a sizeable body of findings showing that decision makers discriminate *in favor of* attractive same-sex candidates (e.g., Bardack & McAndrew, 1985; Cann et al., 1981; Dipboye et al., 1977; Dipboye et al., 1975; Marlowe, Schneider, & Nelson, 1996; Quereshi & Kay, 1986; Watkins & Johnston, 2000). Our theory

explains why decision makers would in some cases discriminate against, and in some cases in favor of, attractive same-sex candidates.

Theory

Members of the same organization are often mutually interdependent. For example, they may share rewards (e.g., when the success of a research and development team is shared by all its members) or compete for valued outcomes (e.g., when only the salesperson who secures the most revenue gets a bonus). Selection decisions are thus often made with the expectation of a particular type of intra-organizational interdependence between the decision maker and the person who is selected for the job. There are many prominent real-world examples. In the financial services company J.P. Morgan, employees participate in making selection decisions about their future peers (J.P. Morgan, 2013). Google has a similar policy whereby employees evaluate their future peers and have a say in selection decisions (Google, 2013). In academic departments, candidates for professorial positions are often selected by professors working in the same department (Darley, Zanna, & Roediger, 2003).

As a result of interdependence, candidates' future task performance may affect decision makers' expected outcomes. Thus, decision makers should be interested in candidates' competence and attempt to evaluate candidates' competence from the cues available in a given situation. Decision makers are often faced with imperfect information about candidates' competence (Arrow, 1973; Phelps, 1972), which is why they might evaluate candidates' competence based on, among other available information, candidates' attractiveness. While there are different specific, context-dependent competence-related inferences people might make of attractive people (e.g., that they are more socially skilled), prior work on person perception suggests a global factor of perceived competence productively organizes most such specific judgments people make of others (Fiske et al., 2002; Wojciszke, 1994).

We expect these attractiveness-based competence inferences to influence decision makers' selection decisions. We argue that decision makers will prefer candidates stereotyped as more capable or stereotyped as less capable, depending on whether decision makers see the more capable candidate as more instrumental to personal outcomes.

Attractiveness—Competence Association for Male versus Female Candidates

The first part of our theory is based on theory and evidence suggesting that decision makers associate attractiveness with competence in men but not women (Berger & Zelditch, 1985). Status generalization theory (Berger, Fisek, Norman, & Zelditch, 1977) argues that externally accessible, status-relevant cues guide competence-related person perception and subsequent interpersonal interactions. External status characteristics affect expectations about a person's competence, even when status characteristics are unrelated to actual competence. Such status characteristics are called "diffuse status characteristics" (Berger et al., 1977) due to their tendency to diffuse into perceptions of other, unrelated features of the person being evaluated (such as competence). A large program of research has found substantial evidence in support of this theory (Berger & Zelditch, 1985).

Strong empirical support is available for the specific prediction from status generalization theory that sex (gender) is a diffuse status characteristic. Because men generally enjoy higher status than women, they are also seen as more competent than women (Meeker & Weitzel-O'Neill, 1977). Attractiveness also serves as diffuse status characteristic, with more attractive individuals enjoying higher status in society, which affects observers' competence impressions (Webster & Driskell, 1983). The two status-relevant characteristics—candidate attractiveness and candidate sex—interact in guiding decision makers' inferences about candidate competence (Jackson, Hunter, & Hodge, 1995). Jackson and colleagues (1995) argued that an individual's attractiveness and sex jointly define perceived competence, such that the effect of attractiveness is stronger for men than for

women, as men's higher status in society amplifies the benefits they derive from attractiveness. The results of their meta-analysis support this notion.

The differential association between candidates' attractiveness and perceived competence in men versus women is also consistent with findings from stereotype research, which shows that attractiveness amplifies the content of gender stereotypes (Dipboye et al., 1975). Because males are stereotyped as more intelligent, competent, and achievement-oriented than females (Deaux & Lewis, 1984; Eagly & Steffen, 1984; Langford & MacKinnon, 2000; Rudman & Glick, 2001; Walton & Cohen, 2003), this literature would also suggest that candidate sex and attractiveness should interact such that more attractive male (but not necessarily female) candidates are perceived as more competent.

Considering the arguments and the existing evidence for the differential association between attractiveness and competence in men versus women, we hypothesize:

Hypothesis 1. Decision makers perceive attractive male, but not female, candidates, as more competent.

Interdependence and Perceived Instrumentality of Competent Candidates

There are two main types of interdependence: cooperative and competitive (Deutsch, 1949; D. W. Johnson & Johnson, 1989; Kelley & Thibaut, 1978). Cooperative interdependence exists when individuals' outcomes are positively correlated, such that the success of one person positively affects the success of the other person. In organizations, employees' outcomes are often affected by the overall organizational performance, in that employees generally enjoy more benefits (e.g., job security, better working conditions, higher pay) in times of financial prosperity, but are also forced to share negative consequences in times of difficulty (e.g., pay cuts, layoffs). Organizations also create cooperative interdependence remunerating its members based on joint rather than individual performance.

Competitive interdependence exists when individuals' outcomes are negatively correlated, such that the success of one person negatively affects the success of another person. Organizations create competitive interdependence by rewarding relative performance, so that the superior performance of an employee produces rewards for that individual but leaves other employees worse off. Such reward systems may be used to stimulate performance in a number of domains of organizational activity (Becker & Huselid, 1992; Casas-Arce & Martínez-Jerez, 2009). For example, employees working in sales may receive bonuses such that only the highest performer or a few employees with the highest performance receive a bonus.

We argue that the expectation of cooperative versus competitive interdependence will determine the pattern of attractiveness discrimination in selection decisions. In the evolutionary work we previously cited, attractive same-sex candidates were seen as a greater threat to decision makers' mating opportunities and, consequentially, discriminated against (Agthe et al., 2010; Luxen & Van De Vijver, 2006). In a similar manner, we argue that work-related competence can make candidates seem more or less instrumental to decision makers' personal outcomes (and thus discriminated in favor of or against), depending on the type of expected work-related interdependence.

When expecting cooperative interdependence with the candidate, the decision maker will be motivated to select the candidate seen as the most competent because such candidate would be the most instrumental to personal outcomes (Hinds et al., 2000; Ridgeway, 1984; Thibaut & Kelley, 1959). As detailed before, decision makers should infer competence from candidate attractiveness in men, but not in women, in that attractive men are seen as more competent. Thus, when cooperation is expected, decision makers should discriminate in favor of attractive male (but not female) candidates.

The opposite reasoning applies when the decision maker expects competitive interdependence with the candidate. In this case, the decision maker will be motivated not to select the person seen as the most competent, because such a person would represent the most capable competitor to the detriment of the decision maker's interest (Friebel & Raith, 2004; Garcia, Song, & Tesser, 2010). Rather, a candidate seen as less competent would be seen as more instrumental to the decision maker's personal outcomes. Thus, because attractive male (but not female) candidates are seen as more competent, decision makers should see them as less instrumental to personal outcomes and discriminate against attractive male (but not female) candidates. We hypothesize:

Hypothesis 2. When decision makers expect to cooperate with the candidate, they prefer an attractive to an unattractive male, but not female, candidate.

Hypothesis 3. When decision makers expect to compete with the candidate, they prefer an unattractive to an attractive male, but not female, candidate.

We also test the psychological process driving decision makers' responses to candidate attractiveness—the perception of the extent to which the candidate is instrumental to decision makers' personal outcomes. The higher perceived competence of the attractive male candidate should lead to the higher perceived instrumentality of the attractive candidate to the decision maker when the two are expected to cooperate because the candidate's competence at work would positively affects decision makers' success. In contrast, the higher perceived competence of the attractive male candidate should lead to lower perceived instrumentality of the attractive candidate to the decision maker when the two are expected to compete because the candidate's competence at work would negatively affect decision makers' success. Candidates perceived as more instrumental to the decision maker should be discriminated in favor of because this satisfies the decision makers self-interest (Lewin, 1935;

Miller, 1999). Taken together, this formulation implies a moderated mediation model, which we depict in Figure 2 and summarize in our final hypothesis:

Hypothesis 4. Higher perceived competence of attractive male candidates leads to a higher (lower) relative perceived instrumentality of the attractive candidate to the decision maker when cooperation (competition) is expected, in turn resulting in a higher (lower) selection preference for the attractive candidate.

[Insert Figure 2 about here]

Study 1

Methods

Participants and design. Two-hundred and forty-one adults (50.2% male; M_{age} = 31.44, SD_{age} = 12.21; 98.3% with prior work experience; 54.8% with a university degree or above), recruited from Amazon's Mechanical Turk, took part in the study in exchange for $0.50. Information about participant race and current employment was not collected in Studies 1 and 2. Participants were randomly assigned to the conditions of a 3 (interdependence: competition, cooperation, or no interdependence; between-participants) × 2 (candidate sex: male vs. female; between-participants) × 2 (candidate attractiveness: attractive and unattractive; within-participants) design. In the first two studies, we focused on same-sex decision maker—candidate dyads in keeping with research on discrimination against attractive competitors for mates that inspired our work (e.g., Agthe et al., 2010; Luxen & Van De Vijver, 2006). We extended our study design in Studies 3 and 4 by also including mixed-sex dyads.

Procedure and materials. ***Interdependence manipulation***. Participants first read a hiring scenario describing expected competitive interdependence, cooperative interdependence, or no interdependence between themselves as the decision maker and the candidate. The no interdependence condition was included for reasons of continuity with prior

work on the role of attractiveness in selection decisions (e.g., Cann et al., 1981; Cash et al., 1977; Dipboye et al., 1977; Dipboye et al., 1975; Heilman & Saruwatari, 1979; Jawahar & Mattsson, 2005; S. K. Johnson, Podratz, Dipboye, & Gibbons, 2010). We developed the scenarios following previous vignettes on interdependence in organization (Chatman & Barsade, 1995; Toma, Yzerbyt, & Corneille, 2010). Appendix A contains the text of the scenario. To check the effectiveness of the manipulation, we asked participants to indicate their agreement with the following statements: "In the given hiring scenario, the new hire will be my competitor [cooperator]" on a scale ranging from 1 = *strongly disagree* to 9 = *strongly agree*.

Candidate attractiveness manipulation. Next, participants were told they would evaluate the two final candidates for the position described based on their resumes. Participants saw the resumes of two candidates (of the same sex as the participant), presented in random order. The word-length and the format of the resumes were held constant. We slightly varied the contents of the resumes (education, experience, and hobbies) across candidates to make the task more believable. Both candidates were said to be 21 years old.

Candidate attractiveness was manipulated by varying the appearance of the person shown in the picture accompanying the resume. To this end, we adopted standardized headshots of attractive versus unattractive males and females developed and used in prior research (Braun, Gruendl, Marberger, & Scherber, 2001; Meier, D'Agostino, Elliot, Maier, & Wilkowski, 2012; van der Weiden, Veling, & Aarts, 2010; Van Leeuwen, Veling, Van Baaren, & Dijksterhuis, 2009). The pictures were computer-generated to represent either a prototypical attractive person or a prototypical unattractive person and were highly standardized (see Braun et al., 2001 for details). We counterbalanced the picture of an attractive versus unattractive person across the two resumes, excluding the possibility that the effect of the candidate attractiveness manipulation is due to differences other than candidate

images. A separate data collection, reported in the Appendix B, suggested manipulation effectiveness.

Perceived competence and instrumentality. After reviewing the resumes, participants responded to four questions measuring *perceived competence* taken from past research (Rudman, 1998): "How competent do you think this candidate is?"; "How intelligent do you think this candidate is?"; "How well do you think this candidate will perform in this job?"; and "How successful do you think the candidate will be in his/her career?" (1 = *not at all*, 7 = *very much*; $\alpha_{attractive}$ = .89; $\alpha_{unattractive}$ = .89). In addition, following previous research (Fitzsimons & Shah, 2008, 2009), we measured *perceived instrumentality* of the candidate to the decision maker by asking participants to respond to the following statement: "Assuming that this candidate is hired, the presence of this person in my team makes it likelier that I will succeed in my career" (1 = *strongly disagree*, 7 = *strongly agree*).

Dependent variable: selection decisions. Finally, participants responded to a selection decision measure taken from past research (Heilman & Saruwatari, 1979): "How likely would you be to recommend hiring this candidate for the position?" (1 = *not at all*, 7 = *very much*).

Results

Manipulation check. Planned contrasts found that the perception that candidate would represent a cooperator was higher in the cooperation condition (M = 8.24, SD = 1.44) than in either the competition condition (M = 2.78, SD = 2.50), $F(1, 238) = 312.36$, $p < .001$, $\eta_p^2 = .57$, or the no interdependence condition (M = 6.74, SD = 1.76), $F(1, 238) = 23.38$, $p < .001$, $\eta_p^2 = .09$. In addition, the perception that candidate would represent a competitor was higher in the competition condition (M = 8.26, SD = 1.13) than in either the cooperation condition (M = 2.59, SD = 2.27), $F(1, 238) = 351.61$, $p < .001$, $\eta_p^2 = .60$, or the no interdependence condition (M = 5.81, SD = 2.15), $F(1, 238) = 65.93$ $p < .001$, $\eta_p^2 = .22$. Thus, the interdependence manipulation was effective.

Hypothesis 1 test: attractiveness—competence association for male versus female candidates. A mixed-effects analysis of variance (ANOVA) on perceived competence found that the interaction between candidate sex and candidate attractiveness was significant, $F(1, 239) = 16.84$, $p < .001$, $\eta_p^2 = .07$, such that the attractive male candidate was seen as more competent ($M = 5.41$, $SD = 0.84$) than the unattractive candidate ($M = 5.14$, $SD = 0.87$), $F(1, 239) = 18.52$, $p < .001$, $\eta_p^2 = .07$, but the attractive female candidate was not perceived as differing in competence ($M = 5.42$, $SD = 0.88$) compared to the unattractive female candidate ($M = 5.51$, $SD = 0.72$), $F(1, 239) = 2.27$, $p = .133$, $\eta_p^2 = .01$. These results support Hypothesis 1.

Hypotheses 2 and 3 test: interdependence and attractiveness discrimination. Mean selection decisions by condition are displayed in Figure 3. A mixed-effects ANOVA found a significant 3-way interaction among interdependence, candidate sex, and candidate attractiveness on selection decisions, $F(2, 235) = 3.28$, $p = .039$, $\eta_p^2 = .03$, such that the effect of candidate attractiveness varied significantly as a function of interdependence among male candidates, $F(2, 238) = 15.21$, $p < .001$, $\eta_p^2 = .11$, but not among female candidates, $F(2, 238) = 1.52$, $p = .221$, $\eta_p^2 = .01$. To test our specific hypotheses, we analyzed simple effects of candidate attractiveness within the different interdependence conditions for male versus female candidates.

[Insert Figure 3 about here]

In the cooperation condition, the attractive male candidate was preferred ($M = 5.41$, $SD = 1.02$) to the unattractive male candidate ($M = 4.92$, $SD = 1.01$), $F(1, 235) = 8.72$, $p = .003$, $\eta_p^2 = .04$. There was no difference between preference for attractive ($M = 4.90$, $SD = 1.03$) and unattractive female candidates ($M = 4.63$, $SD = 1.10$), $F(1, 235) = 2.85$, $p = .093$, $\eta_p^2 = .01$. These results support Hypothesis 2.

In the competition condition, the unattractive male candidate was preferred (M = 4.74, SD = 0.94) to the attractive male candidate (M = 4.02, SD = 1.32), $F(1, 235) = 20.19$, $p <$ .001, $\eta_p^2 = .08$. There was no differences between preference for attractive (M = 4.68, SD = 1.42) and unattractive female candidates (M = 4.80, SD = 1.18), $F(1, 235) = 0.59$, $p = .444$, $\eta_p^2 < .01$. These results support Hypothesis 3.

In the no interdependence condition, selection preference did not differ as a function of candidate attractiveness for either male ($M_{attractive}$ = 5.43, $SD_{attractive}$ = 1.08; $M_{unattractive}$ = 5.22, $SD_{unattractive}$ = 0.80), $F(1, 235) = 1.51$, $p = .221$, $\eta_p^2 = .01$, or female candidates ($M_{attractive}$ = 5.48, $SD_{attractive}$ = 0.96; $M_{unattractive}$ = 5.28, $SD_{unattractive}$ = 1.01), $F(1, 235) = 1.51$, $p = .221$, η_p^2 = .01.

Hypothesis 4 test: the role of instrumentality perception. Figure 2 depicts the hypothesized psychological process. We followed Judd, Kenny, and McClelland's (2001) guidelines for testing mediation in within-subject designs. For all variables, we computed relative scores of attractive versus unattractive candidates by subtracting the ratings for the unattractive candidate from the ratings for the attractive candidate. We tested the moderated mediation model using OLS regression to estimate individual paths and the bootstrap method with 10,000 resamples to test the significance of indirect effects (Shrout & Bolger, 2002). Consistent with our theory and findings that attractiveness affects perceived competence and selection preference only among male (but not female) candidates, the mediation analysis focused on male candidates.

When the decision maker expected to cooperate with the candidate, the higher perceived competence of the attractive male candidate predicted a *higher* perceived instrumentality of the candidate to the decision maker, b = 0.93, SE = 0.23, $p < .001$. In turn, the higher perceived instrumentality of the candidate to the decision maker predicted a higher selection preference for the candidate, b = 0.66, SE = 0.05 $p < .001$, thus producing a

significant and *positive* indirect effect of the higher perceived competence of the attractive male candidate on selection preference, 95% CI [0.26, 0.72].

In contrast, when the decision maker expected to compete with the candidate, the higher perceived competence of the attractive male candidate predicted a *lower* perceived instrumentality of the candidate to the decision maker, b = -1.36, SE = 0.27, $p < .001$. As mentioned above, the higher perceived instrumentality of the candidate to the decision maker in turn predicted a higher selection preference for the candidate, b = 0.66, SE = 0.05, $p < .001$, thus producing a significant and *negative* indirect effect of the higher perceived competence of the attractive male candidate on selection preference, 95% CI [-1.08, -0.38]. The results of the mediation analysis support Hypothesis 4.

Discussion

Study 1 found support for our theory. At the same time, we note that we found no effects of candidate attractiveness on selection decisions in the no interdependence condition. The non-significant finding in our study may perhaps be understood by examining the relevant means of participants' responses to the manipulation checks asking whether the candidate was a cooperator or a competitor. The responses within the no interdependence condition indicate that some participants interpreted the situation as cooperative and some as competitive ($M_{\text{cooperator}}$ = 6.74, $SD_{\text{cooperator}}$ = 1.76; $M_{\text{competitor}}$ = 5.81, $SD_{\text{competitor}}$ = 2.15), which might have eliminated any effect of candidate attractiveness. Specifically, in line with our theory, among those who interpreted the situation as cooperative, male candidate attractiveness might have led to discrimination in favor of the attractive candidate, while among those who interpreted the situation as competitive, male candidate attractiveness might have led to discrimination against the attractive candidate.

It is also possible that decision makers in the no interdependence condition simply did not care which candidate was selected for the position because they were making a decision

irrelevant to their personal outcomes (Rudman, 1998). Indeed, we find overall very high means of selection preference in the no interdependence condition ($M_{attractive}$ = 5.45, $SD_{attractive}$ = 1.02; $M_{unattractive}$ = 5.25, $SD_{unattractive}$ = 0.91, on a scale ranging from one to seven), suggesting that participants did not scrutinize the candidates much. Although there was a slight trend in the direction of preference for the attractive candidates that is consistent with past research showing general preferences for attractive candidates (Hosoda et al., 2003), the effect was non-significant.

Study 2

Study 2 sought to constructively replicate our findings in the context of real selection decisions. To this end, we manipulated interdependence by varying the rewards systems for an actual task in the lab and asked participants to select another person to work on the task.

Methods

Participants and design. Ninety-two adults (54. 3% male; M_{age} = 32.06, SD_{age} = 10.44; 96.7% with prior job experience; 78.2% with a university degree or higher) recruited through a behavioral research lab took part in the study in exchange for £10. They were randomly assigned to the conditions of a 3 (interdependence: competition, cooperation, or no interdependence; between-participants) × 2 (candidate sex: male vs. female; between-participants) × 2 (candidate attractiveness: attractive and unattractive; within-participants) design.

Procedure and materials. ***Sign-up survey***. Participants signed up for the experiment one week in advance. When signing up, they were asked to respond to an online survey. After logging in, participants read that the lab study would consist of choosing another person and taking part in a "question-and-answer game" (Q&A game), in which they would respond to trivia questions (e.g., Klein & Kunda, 1992; Vonk, 1998). The online survey asked participants to report their age, race, and education details. We also asked them to submit

headshot photos using the online survey and to solve ten sample questions for the Q&A game (e.g., "Which number comes next in the series? 1–1–2–3–5–8–13–?"). At the end of the survey, participants were told that the information they submitted online would be used to prepare the brief profile of each participant, which would be used on the day of the experiment.

***Interdependence manipulation*.** A week after filling in the online survey, participants arrived to the lab one-by-one. They were seated in an individual room and instructed by the experimenter that the Q&A game consisted of two parts: participant selection and one round of the Q&A game. They were told they would select another participant to engage in the game, and that there were currently two other participants (located in different rooms) available. Participants were then asked to spend several minutes familiarizing themselves with the Q&A game instruction sheet, which explained that the other participant would be either competitively or cooperatively interdependent with the participant. Appendix C contains the text of the manipulation. To check the effectiveness of the manipulation, we asked participants to indicate their agreement with the following statements: "The person I choose as the other player will be my cooperator [competitor]" on a scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*.

Selection decisions. After reading the instruction sheet, participants reviewed the profiles of two candidates, ostensibly the two other participants waiting in other rooms. The profiles included candidates' age (either 24 or 25 years old), race (White), education (university degree), and the number of points obtained in the sample questions of the pre-survey. We manipulated candidate attractiveness by inserting the same stimulus headshot pictures as in Study 1 (counterbalanced across profiles) at the top of each profile.

Perceived competence and instrumentality. We used the same measure of perceived competence of the candidate as in Study 1 ($\alpha_{attractive}$ = .79; $\alpha_{unattractive}$ = .87). Perceived

instrumentality of the candidate to the decision maker was measured using a similar item as in Study 1: "Assuming that this person becomes the other player, this makes it more likely that I will succeed in the Q&A game." on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*).

Dependent variable: selection decisions. Participants indicated their partner preference using an item taken from past research (Albert, Hill, & Venkatsubramanyan, 2011): "Would you select this person as your task partner?" on a 7-point scale (1 = *absolutely not select*, 7 = *definitely select*).

Results and Discussion

Manipulation check. Planned contrasts found that the perception that the other player would represent a cooperator was higher in the cooperation condition (M = 6.66, SD = 0.75) than in either the competition condition (M = 2.32, SD = 1.87), $F(1, 89) = 107.32$, $p < .001$, $\eta_p^2 = .55$, or the no interdependence condition (M = 3.48, SD = 2.10), $F(1, 89) = 55.60$, $p < .001$, $\eta_p^2 = .39$. In addition, the perception that the other player would represent a competitor was higher in the competition condition (M = 6.29, SD = 1.22) than in either the cooperation condition (M = 2.06, SD = 1.88), $F(1, 89) = 107.95$, $p < .001$, $\eta_p^2 = .55$, or the no interdependence condition (M = 2.28, SD = 1.67), $F(1, 89) = 92.61$, $p < .001$, $\eta_p^2 = .51$. Thus, the interdependence manipulation was effective.

Hypothesis 1 test: attractiveness—competence association for male versus female candidates. A mixed-effects ANOVA on perceived competence found that the interaction between candidate sex and candidate attractiveness was significant, $F(1, 90) = 20.04$, $p < .001$, $\eta_p^2 = .18$, such that the attractive male candidate was seen as more competent (M = 5.39, SD = 0.65) than the unattractive male candidate (M = 4.57, SD = 0.74), $F(1, 90) = 66.69$, $p < .001$, $\eta_p^2 = .43$, but the attractive female candidate was not perceived as differing in

competence (M = 5.44, SD = 0.54) compared to the unattractive female candidate (M = 5.29, SD = 0.66), $F(1, 90) = 2.00$, $p = .161$, $\eta_p^2 = .02$. These results support Hypothesis 1.

Hypotheses 2 and 3 test: interdependence and attractiveness discrimination. Mean selection decisions by condition are displayed in Figure 4. A mixed-effects ANOVA found a significant 3-way interaction among interdependence, candidate sex, and candidate attractiveness on selection decisions, $F(2, 86) = 5.83$, $p = .004$, $\eta_p^2 = .12$, such that the effect of candidate attractiveness varied significantly as a function of interdependence among male candidates, $F(2, 89) = 18.86$, $p < .001$, $\eta_p^2 = .30$, but not among female candidates, $F(2, 89) = 0.20$, $p = .816$, $\eta_p^2 = .01$. We analyzed simple effects of candidate attractiveness to test our hypotheses.

[Insert Figure 4 about here]

In the cooperation condition, the attractive male candidate was preferred (M = 6.12, SD = 0.99) to the unattractive male candidate (M = 4.29, SD = 1.45), $F(1, 86) = 17.74$, $p < .001$, $\eta_p^2 = .17$. There was no difference between preference for attractive (M = 5.40, SD = 0.83) and unattractive female candidates (M = 4.87, SD = 1.41), $F(1, 86) = 1.34$, $p = .250$, $\eta_p^2 = .02$. These results support Hypothesis 2.

In the competition condition, the unattractive male candidate was preferred (M = 5.11, SD = 1.10) to the attractive male candidate (M = 3.37, SD = 1.34), $F(1, 86) = 17.99$, $p < .001$, $\eta_p^2 = .17$. There was no difference between preference for attractive (M = 4.00, SD = 1.04) and unattractive female candidates (M = 3.92, SD = 0.79), $F(1, 86) = 0.03$, $p = .872$, $\eta_p^2 < .001$. These results support Hypothesis 3.

In the no interdependence condition, selection preference did not differ as a function of candidate attractiveness for either male ($M_{attractive}$= 5.29, $SD_{attractive}$ = 1.27; $M_{unattractive}$ = 4.86, $SD_{unattractive}$ = 1.41), $F(1, 86) = 0.81$, $p = .371$, $\eta_p^2 = .01$, or female candidates ($M_{attractive}$ = 4.93, $SD_{attractive}$ = 0.88; $M_{unattractive}$ = 4.47, $SD_{unattractive}$ = 1.06), $F(1, 86) = 1.03$, $p = .3142$, $\eta_p^2 = .01$.

Hypothesis 4 test: the role of instrumentality perception. We used the same procedure as in Study 1 to test the moderated mediation relationship implied by Hypothesis 4.

When the decision maker expected to cooperate with the candidate, the higher perceived competence of the attractive male candidate predicted a *higher* perceived instrumentality of the candidate to the decision maker, $b = 1.69$, $SE = 0.45$, $p = .001$. In turn, the higher perceived instrumentality of the candidate to the decision maker predicted a higher selection preference for the candidate, $b = 0.86$, $SE = 0.15$, $p < .001$, thus producing a significant and *positive* indirect effect of the higher perceived competence of the attractive male candidate on selection preference, 95% CI [0.84, 2.62].

In contrast, when the decision maker expected to compete with the candidate, the higher perceived competence of the attractive male candidate predicted *lower* perceived instrumentality of the candidate to the decision maker, $b = -1.26$, $SE = 0.59$, $p = .037$. As mentioned above, perceived instrumentality of the candidate to the decision maker in turn predicted a higher selection preference for the candidate, $b = 0.86$, $SE = 0.15$, $p < .001$. This pattern of effects produced a significant and *negative* indirect effect of the higher perceived competence of the attractive male candidate on selection preference, 95% CI [-2.61, -0.02]. The results of the mediation analysis support Hypothesis 4.

Study 3

Study 3 was designed to extend the previous studies in several ways. First, we used a fully crossed design in terms of participant and candidate sex. This allowed us to verify that 1) the sex effects we document are indeed due to inferences related to candidate sex, rather than decision makers' sex-specific decision-making tendencies, and 2) that the effects we document generalize to both decision makers' sexes.

Second, in addition to measuring selection decisions using continuous ratings, we also administered a binary selection measure. Although decision makers often rank candidates

using continuous scales when evaluating them, we wanted to ensure that our results also hold for more categorical, "hire versus do not hire" decisions.

Finally, we included a measure of perceived warmth of the candidate to empirically distinguish our predictions from predictions made by societal-level discrimination theories such as stereotype content model. This model predicts that cooperation (vs. competition) with a group translates into a generalized sense of warmth (vs. coldness) toward that group, ultimately causing more favorable (unfavorable) treatment of its members (Fiske et al., 2002). In contrast, our theory suggests that a more immediate, self-interested consideration of the work-related relevance of the candidate to the decision maker flowing from expected interdependence should explain decision makers' discrimination decisions even after controlling for the generalized perception of candidates' warmth.

Method

Participants and design. For this study and Study 4, we used the G*power 3.1 software to calculate the number of participants that would be needed, based on our study design, to significantly detect a small effect ($f = 0.1$) based on Cohen's (2005) classification. This calculation suggested the required number of participants is 264. We recruited 271 adults (48.7% male; $M_{age} = 32.40$, $SD_{age} = 9.60$) from Amazon's Mechanical Turk, who took part in the study in exchange for $1.00.

To bring our sample characteristics more in line with those of organizational decision makers, for main Studies 3 and 4, we requested only workers who were currently employed in organizations, and we indicated preference for those who had experience participating in hiring activities. The average tenure of participants with their current organization was 5.69 years ($SD = 6.78$), the average year of work experience was 14.82 years ($SD = 11.14$), and 77.2% had participated in hiring activities in their workplace. Among participants, 74.9% were White, 12.2% Asian, and 8.5% Black.

Participants were randomly assigned to the conditions of a 2 (participant sex: male vs. female; between-participants) × 2 (interdependence: competition vs. cooperation; between-participants) × 2 (candidate sex: male vs. female; between-participants) × 2 (candidate attractiveness: attractive and unattractive; within-participants) design. We did not include a no-interdependence condition (either in this study or Study 4) as in our previous studies we did not find any discriminatory behavior in this condition, and because the two interdependence conditions are the only ones that test our theory.

Procedure and materials. The procedure was identical to that of Study 1 except for the inclusion of a measure of perceived warmth of the candidate and an additional binary measure of selection decisions, which we describe below. For all composite study measures, α was greater than .93.

Perceived warmth. Participants responded to six questions measuring perceived warmth of the candidate taken from past research (Cuddy, Fiske, & Glick, 2007; Cuddy, Glick, & Beninger, 2011; Fiske et al., 2002): "How likable [warm] [friendly] [sincere] [kind] [trustworthy] do you think this candidate is?" on a scale ranging from 1 = *not at all* to 7 = *very much*).

Dependent variable: selection decisions. In addition to the continuous measure of selection decisions used in Study 1, participants were also asked to recommend one candidate to be hired for their team, and the responses were coded as 0 = *unattractive candidate and* 1 = *attractive candidate*.

Results and Discussion

Manipulation check. Planned contrasts found that the perception that the candidate would represent a cooperator was higher in the cooperation condition (M = 6.69, SD = 0.77) than in the competition condition (M = 2.35, SD = 1.80), $F(1, 269) = 680.84$, $p < .001$, $\eta_p^2 = .72$. In addition, the perception that the candidate would represent a competitor was higher in

the competition condition (M = 6.20, SD = 1.70) than in the cooperation condition (M = 1.73, SD = 1.45), $F(1, 269) = 546.93$, $p < .001$, $\eta_p^2 = .67$. Thus, the interdependence manipulation was effective.

Hypothesis 1 test: attractiveness—competence association for male versus female candidates. Preliminary analyses for all hypotheses tests found that participant sex had no significant effects nor interactions (ps > .084), so we report the results of analyses conducted without this factor.

A mixed-effects ANOVA on perceived competence found that the interaction between candidate sex and candidate attractiveness was significant, $F(1, 269) = 40.24$, $p < .001$, $\eta_p^2 = .13$, such that the attractive male candidate was seen as more competent (M = 5.97, SD = 0.81) than the unattractive male candidate (M = 5.22, SD = 0.75), $F(1, 269) = 70.83$, $p < .001$, $\eta_p^2 = .21$, but the attractive female candidate was not perceived as differing in competence (M = 5.53, SD = 1.05) compared to the unattractive female candidate (M = 5.58, SD = 1.03), $F(1, 269) = 0.29$, $p = .589$, $\eta_p^2 < .01$. These results support Hypothesis 1.

Hypotheses 2 and 3 test: interdependence and attractiveness discrimination.

Continuous measure of selection decisions. Mean selection decisions by condition are displayed in Figure 5A. A mixed-effects ANOVA found a significant 3-way interaction among interdependence, candidate sex, and candidate attractiveness on continuous selection decisions, $F(1, 267) = 28.14$, $p < .001$, $\eta_p^2 = .10$, such that the effect of candidate attractiveness varied significantly as a function of interdependence among male candidates, $F(1, 268) = 53.72$, $p < .001$, $\eta_p^2 = .17$, but not among female candidates, $F(1, 268) = 0.02$, $p = .875$, $\eta_p^2 < .01$. We analyzed simple effects of candidate attractiveness to test our hypotheses.

[Insert Figure 5A about here]

In the cooperation condition, the attractive male candidate was preferred (M = 6.11, SD = 1.13) to the unattractive male candidate (M = 4.82, SD = 1.20), $F(1, 267) = 21.40$, $p <$

.001, η_p^2 = .07. There was no difference between preference for attractive (*M* = 5.37, *SD* = 1.52) and unattractive female candidates (*M* = 5.55, *SD* = 1.35), *F*(1, 267) = 0.38, *p* = .540, η_p^2 < .01. These results support Hypothesis 2.

In the competition condition, the unattractive male candidate was preferred (*M* = 5.34, *SD* = 1.34) to the attractive male candidate (*M* = 3.61, *SD* = 1.91), *F*(1, 267) = 32.32, *p* <. 001, η_p^2 = .11. There was no difference between preference for attractive (*M* = 4.48, *SD* = 1.85) and unattractive female candidates (*M* = 4.59, *SD* = 1.76), *F*(1, 267) = 0.16, *p* = .687, η_p^2 < .01. These results support Hypothesis 3.

Binary measure of selection decisions. Participants' selection decision frequencies by condition are displayed in Figure 5B. For this and all other analyses involving binary outcomes, we used logistic regression. We analyzed participants' binary selection decisions as a function of candidate sex and interdependence condition. We found a significant interaction between candidate sex and interdependence, *b* = -2.06, *SE* = 0.73, *p* = .005. For male candidates, the coefficient for the effect of interdependence (0 = *cooperation*, 1 = *competition*) on selection decisions (0 = *unattractive candidate*, 1 = *attractive candidate*) was significant and negative, *b* = -1.90, *SE* = 0.54, *p* = .001. This suggests a greater likelihood of preference for the attractive male candidate when the decision maker expected cooperation (58 out of 74; 78.4%) than when competition was expected (16 out of 61; 26.2%).

[Insert Figure 5B about here]

For female candidates, the coefficient for the effect of interdependence on selection decisions was non-significant, *b* = 0.16, *SE* = 0.49, *p* = .744, showing that preference between the attractive and the unattractive female candidates was not affected by decision maker—candidate interdependence. Specifically, attractive candidates were selected over unattractive candidates at about the same rate in both the cooperation condition (28 out of 67; 41.8) and

the competition condition (31 out of 69; 44.9%:). The binary selection decisions results also support Hypotheses 2 and 3.

Hypothesis 4 test: the role of instrumentality perception.

Continuous measure of selection decisions. To test the moderated mediation relationship implied by Hypothesis 4, we first analyzed the continuous measure of selection decisions. We used the same procedure as in prior studies and we also controlled for the perceived warmth of the candidate.

When the decision maker expected to cooperate with the candidate, the higher perceived competence of the attractive male candidate predicted a *higher* perceived instrumentality of the candidate to the decision maker, $b = 1.16$, $SE = 0.21$, $p < .001$. In turn, the higher perceived instrumentality of the candidate to the decision maker predicted a higher selection preference for the candidate, $b = 0.93$, $SE = 0.06$, $p < .001$, thus producing a significant and *positive* indirect effect of the higher perceived competence of the attractive male candidate on selection preference, 95% CI [0.43, 1.26].

In contrast, when the decision maker expected to compete with the candidate, the higher perceived competence of the attractive male candidate predicted a *lower* perceived instrumentality of the candidate to the decision maker, $b = -1.69$, $SE = 0.24$, $p < .001$. As mentioned above, the higher perceived instrumentality of the candidate to the decision maker in turn predicted a higher selection preference for the candidate, $b = 0.93$, $SE = 0.06$, $p < .001$, thus producing a significant and *negative* indirect effect of the higher perceived competence of the attractive male candidate on selection preference, 95% CI [-1.84, -0.68].

Binary measure of selection decisions. We repeated the same procedure using the binary measure of selection decisions as the dependent variable. The results of the first stage of the indirect effect are identical to those for the continuous decisions. In the second stage, the higher perceived instrumentality of the candidate to the decision maker predicted higher

likelihood of being selected, $b = 0.15$, $SE = 0.13$, $p < .001$. Thus, when the decision maker expected to cooperate with the candidate, the higher perceived instrumentality of the attractive male candidate mediated the positive effect of the higher perceived competence of the attractive candidate on binary selection decisions, 95% CI [0.47, 2.12].

In contrast, when the decision maker expected to compete with the candidate, the lower perceived instrumentality of the attractive male candidate to the decision maker mediated the negative effect of the higher perceived competence of the attractive candidate on binary selection decisions, 95% CI [-3.10, -0.64]. The results of the analyses of both continuous and binary measures of selection decisions support Hypothesis 4.

Study 4

The primary goal of Study 4 was to replicate our findings using a different manipulation of candidate attractiveness and, in that way, to increase the generalizability of our conclusions. To this end, we used photos of business school students, naturally varying in attractiveness, who were about to apply for jobs. We selected sets of photos matched in terms of attractiveness difference to create a fully standardized attractiveness manipulation while taking the advantage of the ecological realism the photos provided.

Methods

Participants and design. Two-hundred and seventy-three working adults (50.9% male; $M_{age} = 32.78$, $SD_{age} = 10.04$), recruited following the same procedure as in Study 3, took part in the study in exchange for $1.00. All participants were currently employed, the average tenure of participants with the current organization was 5.90 years ($SD = 6.39$), the average year of work experience was 16.23 years ($SD = 11.37$), and 50.2% had participated in hiring activities in their workplace. Among participants, 76.6% were White, 11.0% Asian, and 8.4% Black. They were randomly assigned to the conditions of a 2 (participant sex: male vs. female; between-participants) × 2 (interdependence: competition vs. cooperation; between-

participants) × 2 (candidate sex: male vs. female; between-participants) × 2 (candidate attractiveness: attractive and unattractive; within-participants) design.

Procedure and materials. The procedure was identical to that of Study 3 except the new candidate attractiveness manipulation. For all study measures, α was greater than .93.

Candidate attractiveness manipulation. We obtained photos from a yearbook of a graduating class at a European business school (the total class size was 122). All photos were in color, showing students in their mid-20s (most White), and focused on their head and shoulders. Following past research (S. K. Johnson et al., 2010), we excluded photos that showed any facial disfigurements, inappropriate hair or clothing, or in which the person wore glasses. We focused on a subsample of 17 male and 18 female students (all White) based on this selection. Appendix D reports the results of a separate data collection in which students' attractiveness was rated. Based on the ratings, we selected a final set of 12 photographs such that the mean difference between attractive and unattractive men was significant and almost identical to the mean difference between attractive and unattractive women, which was also significant.

Results and Discussion

Manipulation check. Planned contrasts found that the perception that the candidate would represent a cooperator was higher in the cooperation condition (M = 6.55, SD = 1.13) than in the competition condition (M = 2.25, SD = 1.90), $F(1, 271) = 518.16$, $p < .001$, $\eta_p^2 = .66$. In addition, the perception that the candidate would represent a competitor was higher in the competition condition (M = 6.50, SD = 1.26) than in the cooperation condition (M = 1.86, SD = 1.53), $F(1, 269) = 747.62$, $p < .001$, $\eta_p^2 = .73$. Thus, the interdependence manipulation was effective.

Hypothesis 1 test: attractiveness—competence association for male versus female candidates. Preliminary analyses for all hypotheses tests again found that participant sex had

neither significant effects nor interactions (*p*s > .218), so we report the results of analyses conducted without this factor.

A mixed-effects ANOVA[1] on perceived competence found that the interaction between candidate sex and candidate attractiveness was significant, $F(1, 271) = 77.24$, $p < .001$, $\eta_p^2 = .22$, such that the attractive male candidate was seen as more competent ($M = 6.14$, $SD = 0.71$) than the unattractive male candidate ($M = 5.19$, $SD = 0.86$), $F(1, 271) = 120.54$, $p < .001$, $\eta_p^2 = .31$, but the attractive female candidate was not perceived as differing in competence ($M = 5.49$, $SD = 0.96$) from the unattractive female candidate ($M = 5.60$, $SD = 1.06$), $F(1, 271) = 1.76$, $p = .186$, $\eta_p^2 = .01$. These results support Hypothesis 1.

Hypotheses 2 and 3 test: interdependence and attractiveness discrimination.

Continuous measure of selection decisions. Mean selection decisions by condition are displayed in Figure 6A. A mixed-effects ANOVA found a significant 3-way interaction among interdependence, candidate sex, and candidate attractiveness on selection decisions, $F(1, 269) = 66.27$, $p < .001$, $\eta_p^2 = .20$. The effect of candidate attractiveness varied as a function of interdependence among male candidates, $F(1, 270) = 81.73$, $p < .001$, $\eta_p^2 = .23$, as well as among female candidates, $F(1, 270) = 5.76$, $p = .017$, $\eta_p^2 = .02$, but among female candidate the interaction was in the opposite direction; as we detail below, this was driven by an unexpected weak trend of female candidates' attractiveness in the competition condition that was in the *opposite* direction from the one found for male candidates. We analyzed simple effects of candidate attractiveness to test our hypotheses.

[Insert Figure 6A about here]

In the cooperation condition, the attractive male candidate was preferred ($M = 6.49$, $SD = 0.80$) to the unattractive male candidate ($M = 4.70$, $SD = 1.30$), $F(1, 269) = 39.93$, $p <$

[1] We reran all Study 4 hypotheses tests using multilevel modeling, with attractiveness as a random factor at the level of stimuli (Judd et al., 2001). The results are substantively the same, so we report the simpler analysis.

.001, η_p^2 = .13. There was no difference between preference for attractive (*M* = 5.19, *SD* = 1.48) and unattractive female candidates (*M* = 5.61, *SD* = 1.26), *F*(1, 269) = 2.18, *p* = .141, η_p^2 = .01. These results support Hypothesis 2.

In the competition condition, the unattractive male candidate was preferred (*M* = 4.95, *SD* = 1.55) to the attractive male candidate (*M* = 3.05, *SD* = 1.71, *F*(1, 269) = 41.68, *p* < .001, η_p^2 = .13. For female candidates, there was a weak trend in the opposite direction: The attractive candidate was preferred (*M* = 4.62, *SD* = 1.93) to the unattractive female candidate (*M* = 4.09, *SD* = 1.94), *F*(1, 269) = 3.64, *p* = .057, η_p^2 = .01. The results support Hypothesis 3.

Binary measure of selection decisions. Participants' selection decision frequencies by condition are displayed in Figure 6B. We found a significant interaction between candidate sex and interdependence, *b* = -5.03, *SE* = 0.95, *p* < .001. For male candidates, the coefficient for the effect of interdependence (0 = *cooperation,* 1= *competition*) on binary selection decisions (0 = *unattractive candidate,* 1 = *attractive candidate*) was significant and negative, *b* = -4.17, *SE* = 0.81, *p* < .001. This suggests a greater likelihood of preference for the attractive male candidate when the decision maker expected to cooperate with the candidate (65 out of 69; 94.2%) than when competition was expected (11 out of 64; 17.2%).

[Insert Figure 6B about here]

For female candidates, the coefficient for the effect of interdependence on selection decisions was non-significant, *b* = 0.86, *SE* = 0.49, *p* = .076, showing that preference between the attractive and the unattractive female candidates was not affected by decision maker—candidate interdependence. Specifically, attractive candidates were selected over unattractive candidates at about the same rate in both the cooperation condition (30 out of 69: 43.5%) and the competition condition (42 out of 71: 59.2%). The results for binary selection decisions also support Hypotheses 2 and 3.

Hypothesis 4 test: the role of instrumentality perception.

Continuous selection decisions. The same analysis strategy was used to test mediation as in Study 3. When the decision maker expected to cooperate with the candidate, the higher perceived competence of the attractive male candidate predicted a *higher* perceived instrumentality of the candidate to the decision maker, $b = 1.00$, $SE = 0.18$, $p < .001$. In turn, the higher perceived instrumentality of the candidate to the decision maker predicted a higher selection preference for the candidate, $b = 0.95$, $SE = 0.05$, $p < .001$, thus producing a *positive* indirect effect of the higher perceived competence of the attractive male candidate on selection preference, 95% CI [0.41, 0.93].

In contrast, when the decision maker expected to compete with the candidate, the higher perceived competence of the attractive male candidate predicted a *lower* perceived instrumentality of the candidate to the decision maker, $b = -1.28$, $SE = 0.18$, $p < .001$. As mentioned above, the higher perceived instrumentality of the candidate to the decision maker in turn predicted a higher selection preference for the candidate, $b = 0.95$, $SE = 0.05$, $p < .001$, thus producing a *negative* indirect effect of the higher perceived competence of the attractive male candidate on selection preference, 95% CI [-1.38, -0.41].

Binary selection decisions. The results of the first stage of the indirect effect for binary choice were identical to those for continuous decisions. In the second stage, the higher perceived instrumentality of the attractive male candidate to the decision maker predicted higher chance of being selected, $b = 0.16$, $SE = 0.01$, $p < .001$. Thus, when the decision maker expected to cooperate with the candidate, the higher perceived instrumentality of the attractive male candidate mediated the positive effect of the higher perceived competence of the attractive candidate on binary selection decisions, 95% CI [0.47, 3.65].

In contrast, when the decision maker expected to compete with the candidate, the lower perceived instrumentality of the attractive male candidate mediated the negative effect of the higher perceived competence of the attractive candidate on binary selection decisions,

95% CI [-5.37, -0.41]. The results of the analyses of both continuous and binary measures of selection decisions support Hypothesis 4.

General Discussion

Four studies found evidence consistent with our theory that candidate—decision maker interdependence can explain when attractive men (but not women) are discriminated in favor of, as well as against. Our results qualify past research on attractiveness discrimination by challenging the conclusion that decision makers exhibit unvarying preference for attractive candidates (Hosoda et al., 2003). We show that taking the role of the organizational context into account reveals the conditions under which decision makers discriminate in favor of, as well as against, attractive candidates. It is worth noting that our findings do not dispute the general preference for attractive individuals documented in prior work on attractiveness discrimination.

Although we did not find preference for attractive candidates when no interdependence between the decision maker and the candidate was stipulated, a large body of research finds support for this effect (Hosoda et al., 2003). We believe it is possible that different processes operate in parallel, such that decision makers generally prefer attractive candidates (as suggested by most theories and research on attractiveness), but in situations in which their personal outcomes are affected by the decision, they engage in a calculated assessment of anticipated candidate competence and instrumentality (as suggested by our data). The different theoretical perspectives would thus explain different causes of attractiveness discrimination in different situations. This possibility is consistent Langlois and colleagues' (2000) argument that attractiveness discrimination is multi-determined.

Our work also contributes to research arguing that decision makers prefer unattractive same-sex candidates as a result of intrasexual competition processes (e.g., Agthe et al., 2010; Luxen & Van De Vijver, 2006). We believe our theory is not mutually exclusive with this

past work. It is possible that each theory captures a different reason why attractiveness discrimination occurs. But one explanatory limitation of research highlighting intrasexual competition is that it was unable to account for findings showing that decision makers prefer attractive candidates to equally qualified unattractive, even when the candidate is of the same sex as the decision maker (e.g., Bardack & McAndrew, 1985; Cann et al., 1981; Dipboye et al., 1977; Dipboye et al., 1975; Marlowe et al., 1996; Quereshi & Kay, 1986; Watkins & Johnston, 2000). Our theory explains why decision makers would in some cases discriminate against, and in some cases, in favor of, attractive same-sex candidates. More importantly, we go beyond the focus on intrasexual competition by considering the role of task-related interdependence, a defining feature of organizations.

Finally, we believe a more general contribution of our research is the emphasis on self-interested motives in discrimination. Much modern social psychological work focuses on demonstrating behavior contrary to that predicted by rational choice theory. Research on discrimination (including attractiveness discrimination) is no exception: Decision makers are thought of as exhibiting irrational, unvarying preferences for attractive people (Hosoda et al., 2003). Our research extends this thinking by demonstrating that more calculating motives may also underlie attractiveness discrimination: Because people infer competence from external cues, such as attractiveness, they discriminate based on the competence inference in situations in which others' competence is clearly relevant to their personal outcomes (e.g., cooperation and competition). Our work reveals that once self-serving motives are taken into account, decision makers discriminate both in favor of and against the same group of people depending on which course of action is the most self-benefiting. These findings recast attractiveness discrimination as calculated (albeit misguided), self-interested behavior.

Limitations and Future Directions

Our research focused on situations in which decision makers face a choice between equally qualified candidates. Doing so allowed us to isolate the effect of attractiveness in selection decisions and thus measure attractiveness discrimination. It is possible that people are particularly likely to rely on superficial cues to differentiate candidate competence in situations in which there are no clear differences in terms of objective information about candidate competence. However, when some candidates are clearly more qualified than others, attractiveness might play less of a role in selection decisions. Indeed, prior research has shown that discrimination based on attractiveness or other social category information declines when there are obvious differences in objective qualifications between candidates (Dipboye et al., 1975; Dovidio & Gaertner, 2000).

Second, we tested our theory across a limited number of tasks for which candidates were being considered. Some prior research emphasized the importance of the type of task the candidate was applying for (e.g., Cash et al., 1977; Heilman & Saruwatari, 1979; S. K. Johnson et al., 2010). This research suggests that some tasks are stereotyped as more masculine and some as more feminine, and that candidate attractiveness might be an advantage when applying for gender-appropriate tasks, but a hindrance when applying for gender-inappropriate tasks (although empirical support for this idea has been questioned; e.g., Hosoda et al., 2003; Shahani, Dipboye, & Gehrlein, 1993). We note, however, that this perspective does not present an alternative explanation for our findings. If participants had stereotyped the tasks as masculine, we should have found discrimination against attractive female candidates. We did not. If participants had stereotyped the tasks we used as feminine, we should have found discrimination against attractive male candidates. We found the opposite pattern in the cooperation condition. Nevertheless, future research might replicate

our results across different task types (also see Carlsson, Björklund, & Bäckström, 2012) to provide further evidence for our theory.

Third, we focus on situations in which decision makers' self-interested motives are the most salient guide for behavior. However, decision makers are sometimes bound by other motives, such as the motive to appear fair. People likely don't want to seem as if they hired less competent candidates for self-serving reasons. To the extent that there is a risk that others might construe attractiveness-based selection decisions as self-serving, it is possible that the effects we document will weaken. In such cases, it is possible that decision makers would try to balance the two motives by selecting candidates who seem competent enough, but not too threatening. Future research is needed to test the role of fairness motives.

Fourth, another limitation of this research is that we emphasized experimental control at the expense of focusing on data collections in the field. The rationale for that was that we proposed a new explanation of attractiveness discrimination, so we believed internal validity was of primary concern. We tried to mitigate threats to external validity by emphasizing the working population in our studies. Regardless, we do believe that future research replicating our findings in the field is necessary to enhance the generalizability of our theory.

Finally, our theory explains why decision makers discriminate on the basis of physical attractiveness among male candidates, but it does not explain attractiveness discrimination in directed at women. We predicted a weaker attractiveness—competence association among women on the basis of past research, so we sought to test the differential implications of our theory for male versus female candidates. At the same time, the fact that we found no effects among female candidates can be considered an explanatory limitation of our theory. Other motives may be driving discrimination among female candidates, and complementary theories of discrimination must be recruited to model such behavior.

Practical Implications

Many selection decisions in organizations occur in the context of decision maker—candidate interdependence (Edenborough, 2005; Harris et al., 2003). Our results suggest this organizational factor can promote discriminatory behavior among decision makers both in favor of and against attractive male candidates. Managers might employ several techniques to minimize such problematic tendencies. First, managers could delegate selection decisions to employees who are have no connection to the organizational activities for which candidates are being considered. This would minimize expected decision maker—candidate interdependence, thus weakening one basis for attractiveness discrimination. However, it is often the employees who are working on the same organizational tasks who are best suited to evaluate candidate quality, so in some cases this strategy might not be feasible.

Another route for reducing discriminatory behavior implied by our theory is implementing decision-making accountability systems, i.e., policies that require decision makers to justify their decisions (Tetlock, 1985). Accountability has been shown to reduce stereotypical thinking by motivating the thorough processing of social information (Weary, Jacobson, Edwards, & Tobin, 2001). Accountability might thus reduce the (stereotypical) association between attractiveness and competence for male candidates and, in that way, undercut the psychological process resulting in attractiveness discrimination.

Managers might also reduce discriminatory behavior by promoting joint, rather than separate, evaluation of candidates, such that the key candidates are considered at the same time (Bazerman, Loewenstein, & White, 1992). Joint evaluation should motivate comparisons of objective candidate characteristics (Hsee, Loewenstein, Blount, & Bazerman, 1999), such as education and employment history. In this way, managers might reduce the biased perception of attractive male candidates as more competent and, as a consequence, minimize discrimination.

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Appendix A: Study 1 Interdependence Manipulation

The initial part of the scenarios was the same for all conditions:

> After graduating from college, you have been working as an entry-level employee for a marketing and sales team in a well-known telecommunication company for a few months. You are the only entry-level employee in your team. Your team is looking to hire an additional entry-level employee, and your team manager made the following remarks about your future in a meeting.

Next, participants in the *cooperation (competition)* condition read the message from the team manager:

> You and the new hire will perform a joint task (two similar tasks respectively) for the next few months. Depending on the joint (relative) performance, I will make a promotion decision for you and the new hire. If the joint performance is good, both will be promoted, if it is poor, both will have to leave the team and the company (only the one with better performance will be promoted and the one with poorer performance will have to leave the team and the company).

In the *no interdependence* condition, interdependence was not described (i.e., there were no manager's remarks).

Appendix B: Study 1 Attractiveness Manipulation Check

To verify the effectiveness of the attractiveness manipulation, we recruited an independent sample of 103 adults (63.1% male; M_{age} = 32.69, SD_{age} = 9.20) from Amazon's Mechnical Turk. Pretest participants were randomly assigned to view either male or female pictures and were asked to indicate (1 = *strongly disagree*, 7 = *strongly agree*) whether they thought the person in the picture was "attractive," "good-looking," and "beautiful," based on attractiveness measures used in prior research (S. K. Johnson et al., 2010; Lee, Loewenstein, Ariely, Hong, & Young, 2008; Sadalla, Kenrick, & Vershure, 1987).

The attractive male was perceived as more attractive (M = 5.15, SD = 0.69; α = .73) than the unattractive male (M = 3.21, SD = 0.97; α = .87), $F(1, 101) = 136.06$, $p < .001$, $\eta_p^2 = .57$. In addition, the attractive female was perceived as more attractive (M = 5.90, SD = 0.71; α = .86) than the unattractive female (M = 3.53, SD = 1.25; α = .91), $F(1, 101) = 196.71$, $p < .001$, $\eta_p^2 = .66$. Finally, we note that the candidate attractiveness × candidate sex interaction was non-significant, $F(1, 101) = 3.09$, $p = .082$, $\eta_p^2 = .30$; the effect of the attractiveness manipulation did not differ as a function of candidate sex. The findings suggest that our attractiveness manipulation was effective and standardized for male versus female candidates.

Appendix C: Study 2 Interdependence Manipulation

Your aim in this game is to cooperate with the other player to get as many correct answers as possible as a team. During the game, each correct answer earns 3 points, and all the points (earned by both you and your partner) will be aggregated. At the end of the game, all the points will be evenly divided between the two players. For example, if you get 6 correct answers, and the other player gets 5 correct answers, each of you will get half of the total points.

Participants in the *competition* condition read:

Your aim in this game is to compete with the other player to get more correct answers than he/she does. During the game, each correct answer earns 3 points, and all the points (earned either by you or your partner) will be aggregated. At the end of the game, all the points will be given to the player who gets more correct answers than the other player. For example, if you get 6 correct answers, and the other player gets 5 correct answers, you will get all the points, and your partner will get none.

Participants in the *no interdependence* condition were told:

Your aim in this game is to get as many correct answers as possible individually. During the game, each correct answer earns 3 points, and all the points (earned by both you and your partner) will be aggregated. At the end of the game, you will get the points you earned and the other player will get the points he/she earned. For example, if you get 6 correct answers, and the other player gets 5 correct answers, each of you will get the respective amount of points you earned.

Appendix D: Study 4 Attractiveness Manipulation Check

Next, we recruited an independent sample of 119 adults (62.2% male; M_{age} = 32.32, SD_{age} = 9.01) following the same procedure as in the Study 1 pretest. They were asked to indicate their perception of the attractiveness of the 35 students, using the same 3-item measure of perceived attractiveness as in the Study 1 pretest. Based on these results, we selected a final set of 12 photographs (3 attractive men; 3 unattractive men; 3 attractive women; and 3 unattractive women) such that the mean difference between attractive versus unattractive men (ΔM = 1.13) was almost identical to the mean difference between attractive versus unattractive women (ΔM = 1.17). Thus, this procedure ensured that the strength of the attractiveness manipulation was standardized across candidate sex.

Formal tests provided evidence of the manipulation effectiveness and standardization. Attractive males were perceived as more attractive (M = 4.68, SD = 1.24; α = .91) than unattractive males (M = 3.55, SD = 1.24; α = .81), $F(1, 117) = 65.92$, $p < .001$, $\eta_p^2 = .36$. In addition, attractive females were also perceived as more attractive (M = 5.64, SD = 0.87; α = .90) than unattractive females (M = 4.47, SD = 0.92; α = .85), $F(1, 117) = 76.76$, $p < .001$, $\eta_p^2 = .40$. Finally, the candidate attractiveness × candidate sex interaction was non-significant, $F(1, 117) = 0.04$, $p = .839$, $\eta_p^2 < .01$, which is to say that the effect of the attractiveness manipulation did not differ as a function of candidate sex. The findings thus show that the attractiveness manipulation was effective and was highly standardized for male versus female candidates.

Figures

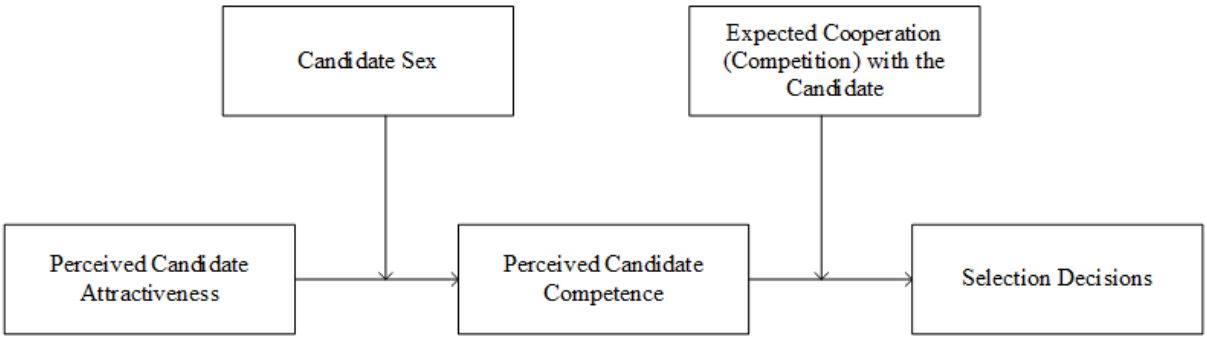

Figure 1. Overview of the theory.

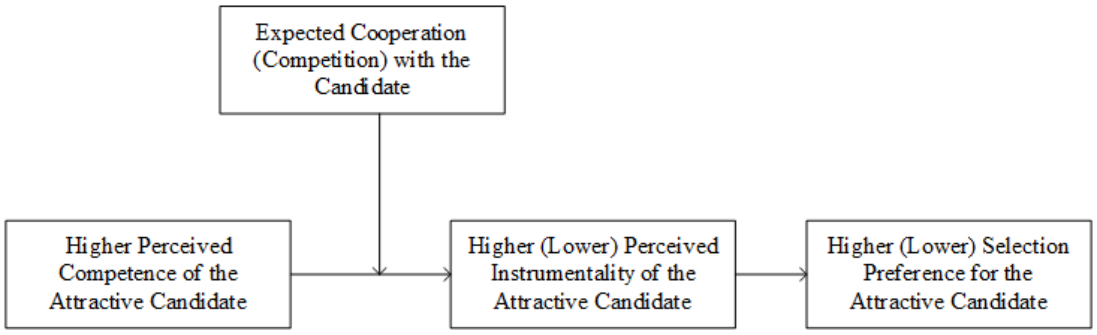

Figure 2. Moderated mediation model testing the hypothesized psychological process.

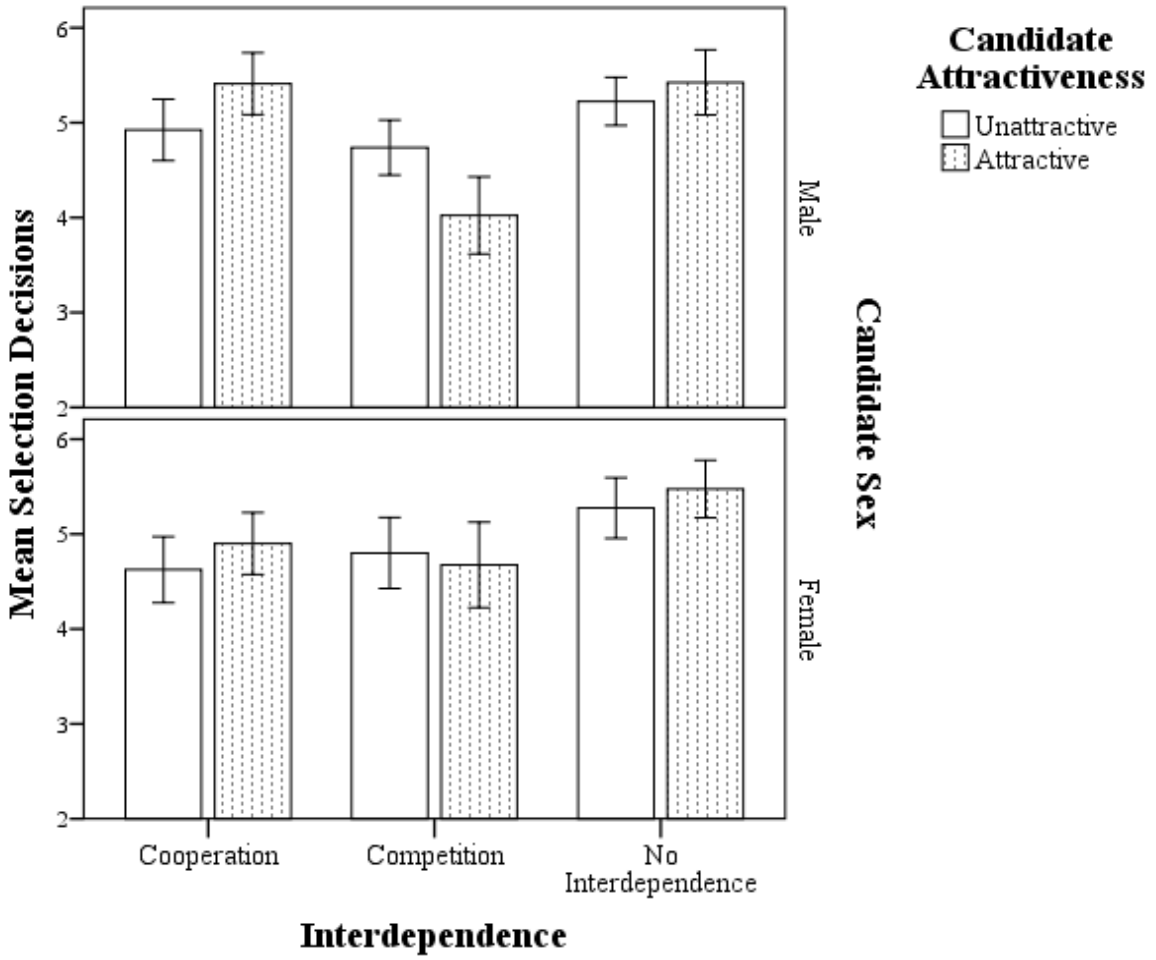

Figure 3. Study 1: Mean selection decisions by condition. Error bars represent standard errors.

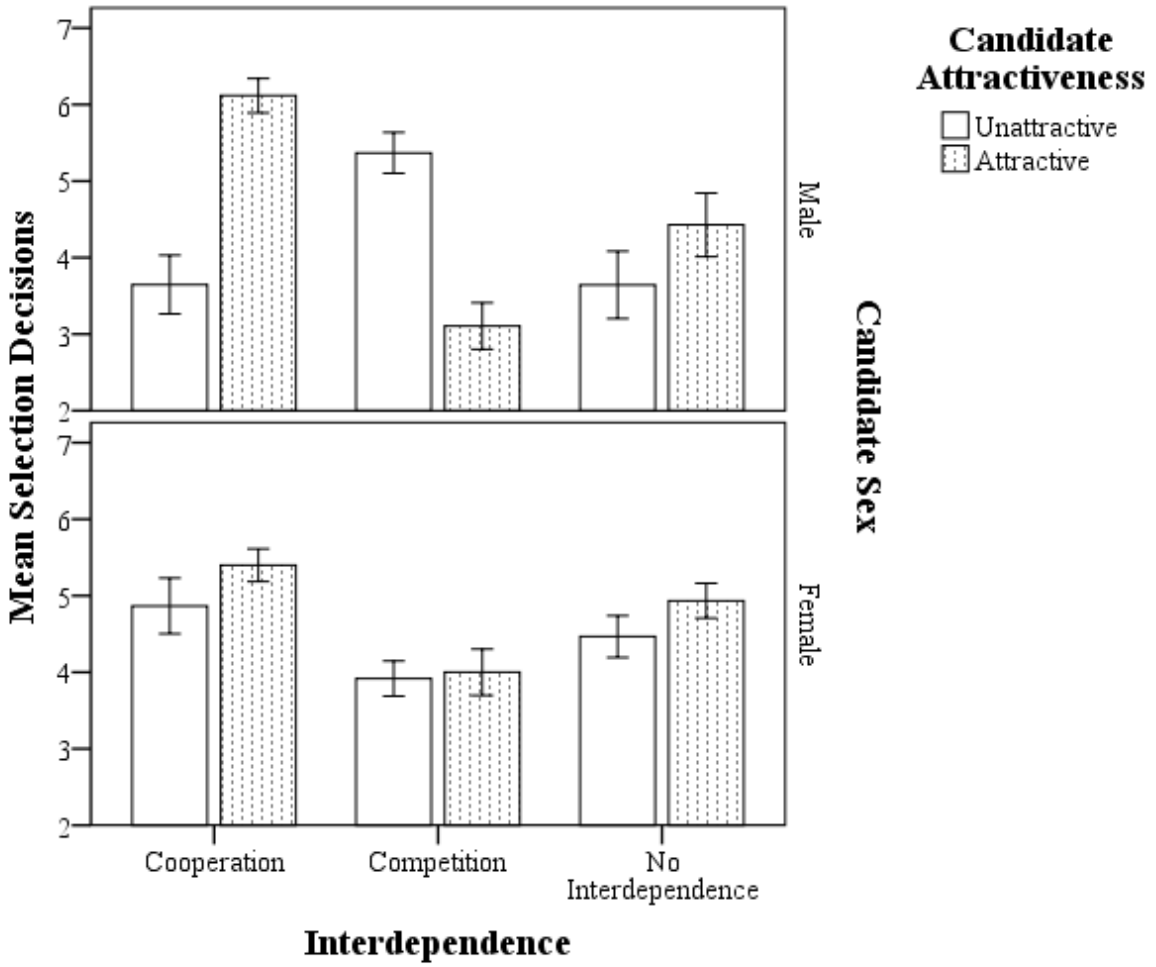

Figure 4. Study 2: Mean selection decisions by condition. Error bars represent standard errors.

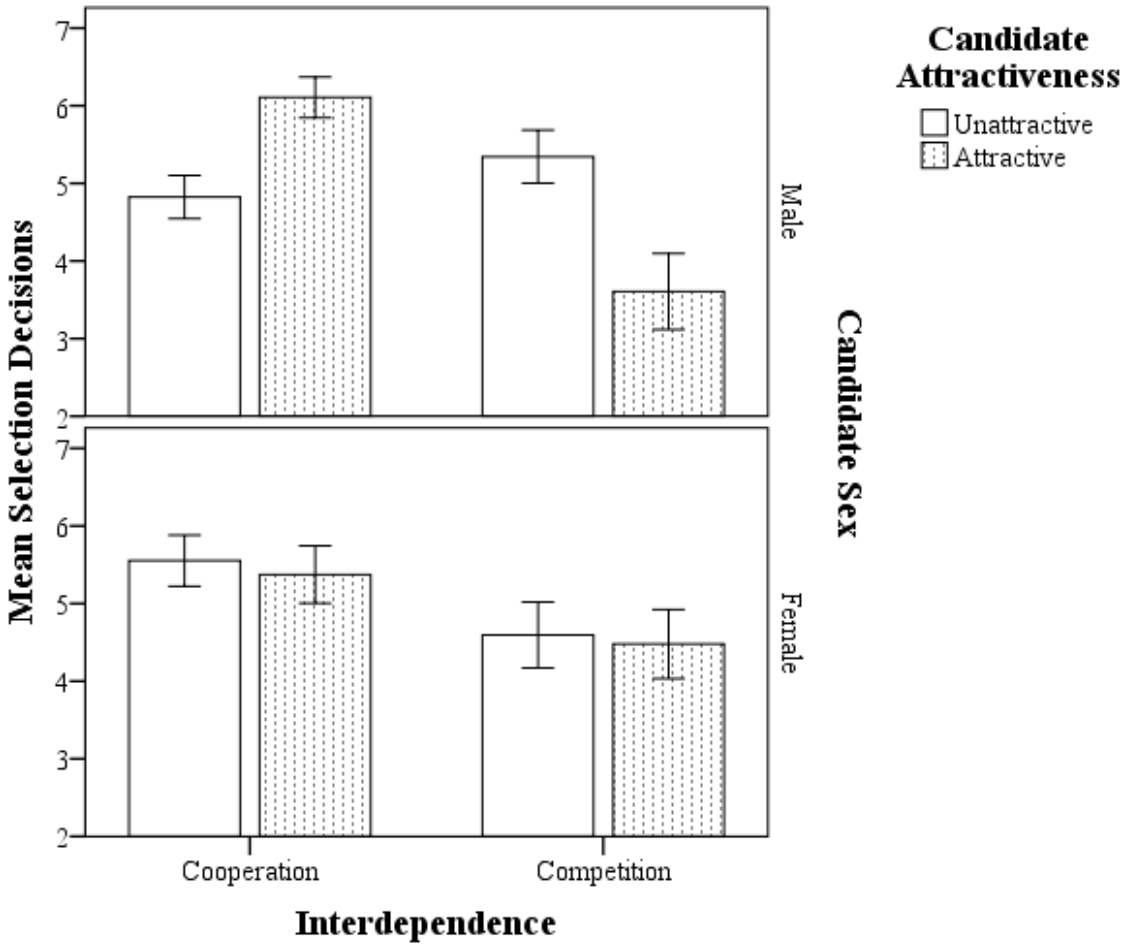

Figure 5A. Study 3: Mean selection decisions by condition. Error bars represent standard errors.

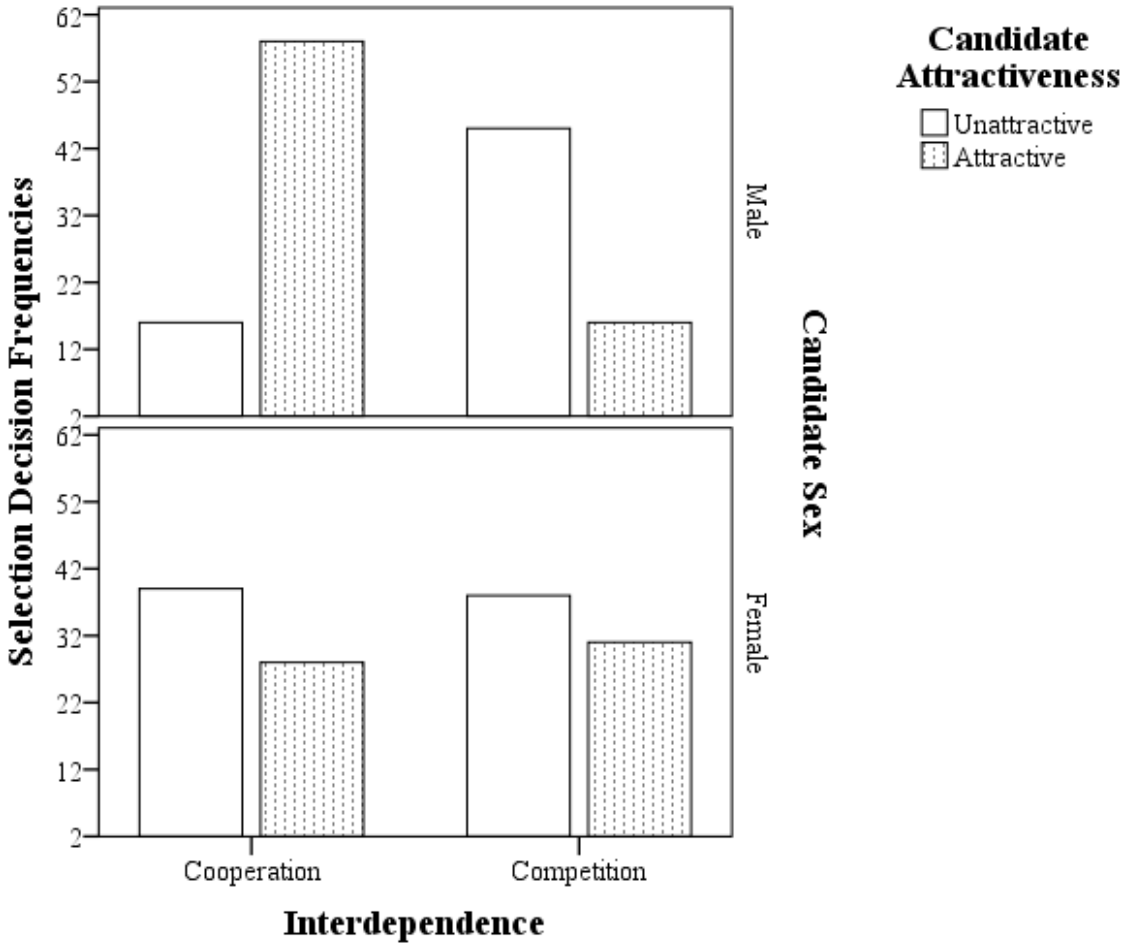

Figure 5B. Study 3: Binary selection decision frequencies by condition.

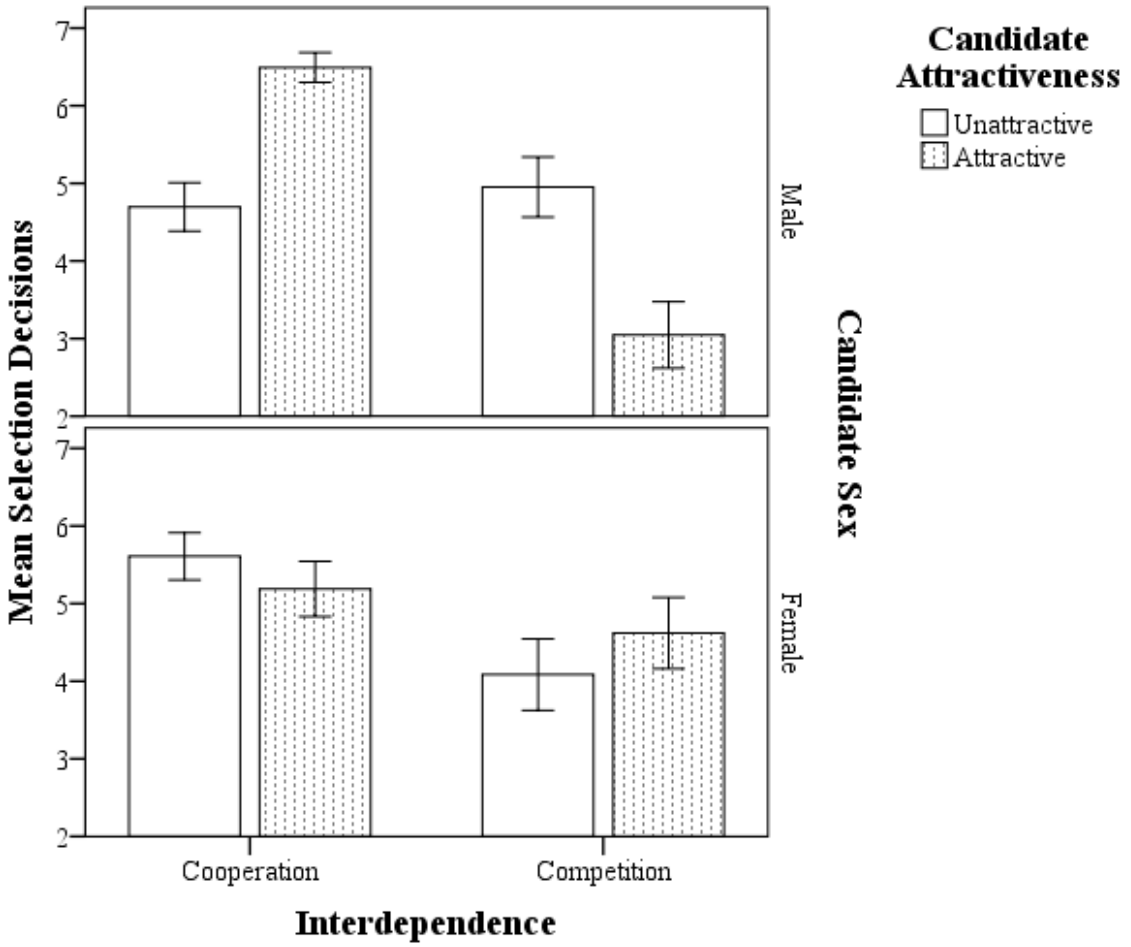

Figure 6A. Study 4: Mean selection decisions by condition. Error bars represent standard errors.

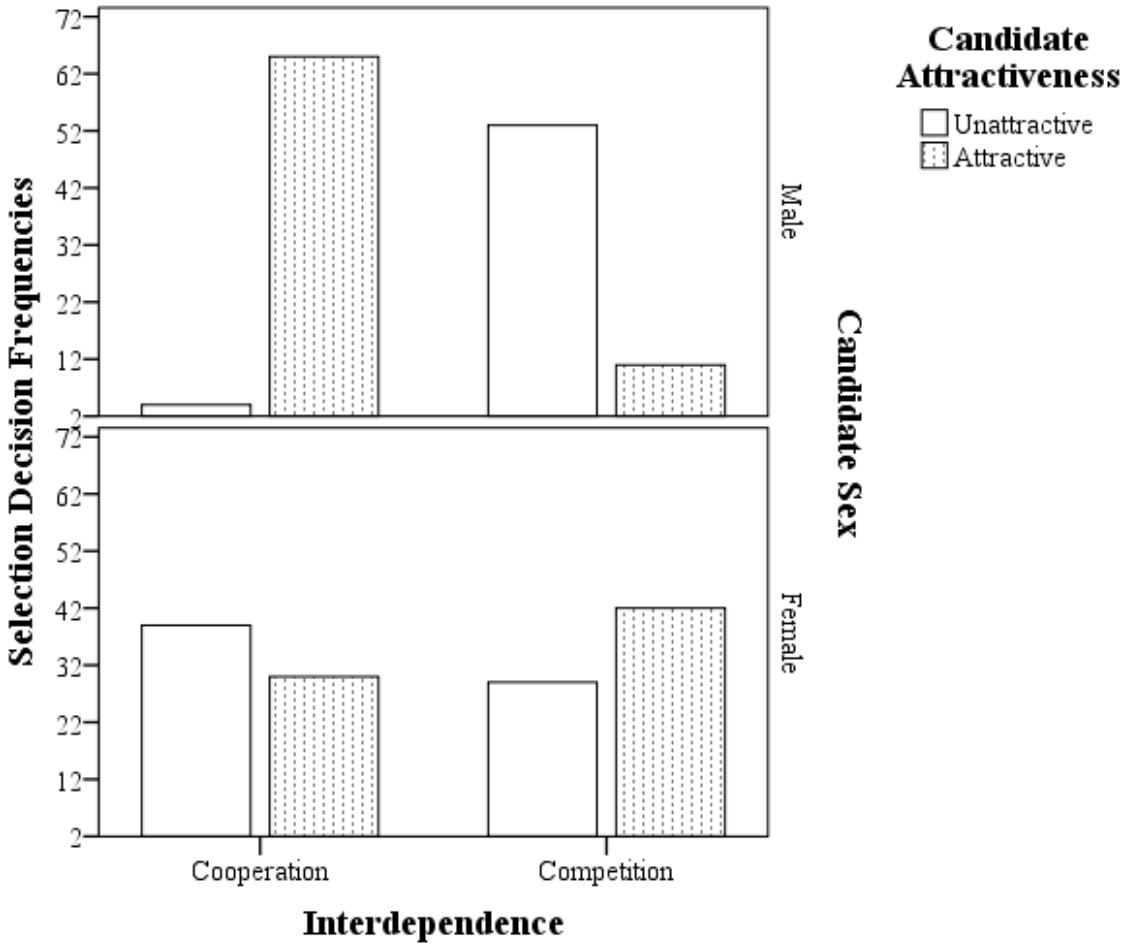

Figure 6B. Study 4: Binary selection decision frequencies by condition.