

Men and the Middle: Gender Differences in Dyadic Compromise Effects

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Individual decision makers show robust tendencies toward choosing compromise options. But what happens when consumers make choices with someone else? This article examines the choice of compromise options in joint dyadic decisions. Findings reveal that preferences for compromise alternatives replicate in mixed-gender and female-female dyads as among individuals but are attenuated when two males make a choice together. Moreover, when two males make joint choices, their tendency to choose the compromise alternative decreases not only relative to other types of pairs but also to male and female individual decision makers. Evidence is presented that this happens because male-male dyadic contexts cue gender dichotomization, behavior that is consistent with masculine but not feminine gender norms. Because the extremity in decision making is maximally consistent with masculine but not feminine gender role norms, male-male dyads exhibit lower preferences for compromise options. However, if men have an opportunity to signal masculinity to one another prior to making joint compromise choices, male-male dyads prefer compromise options at proportions no different from female-female dyads. This work brings together the judgment and decision-making literature with insights from the social psychology literature, identifying a case when gender role norms have profound influences on classic judgment and decision-making effects.

Keywords: compromise effect, extremeness aversion, dyadic decisions, joint decision making, gender

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The compromise effect, also referred to as extreme-ness aversion, is a robust phenomenon in the consumer behavior literature, showing substantial magnitude and replicability across a range of approaches (Kivetz, Netzer, and Srinivasan 2004), stimuli (Chernev 2004; Dhar and Simonson 2003; Drolet 2002; Simonson and Nowlis 2000; Simonson 1989), and in both real and hypothetical choices (Müller, Kroll, and Vogt 2012). The compromise effect emerges when the addition of an extreme, but not inferior, option to a two-item set raises the choice share of the intermediate, or compromise, alternative (Simonson 1989; Simonson and Tversky 1992). In its broadest sense, compromise effect (or extreme-ness aversion) refers to consumers' tendency to avoid extreme options in a choice set, instead showing stronger preferences for the middle, compromise alternatives (Neumann, Böckenholt, and Sinha 2016; Simonson and Tversky 1992). Research generally argues that individuals select the compromise option as a manifestation of reason-based choice: consumers can provide reasons to support a

compromise alternative and thus tend to lean toward its selection (Simonson 1989).

But do individuals represent the dominant type of decision-making unit in these contexts? We conducted a pilot study ($n = 104$, 62% male) in which we asked participants to classify all the decision stimuli used in prior research on the compromise effect as more frequently purchased/chosen either “individually” or “jointly by a pair of people” (online appendix A). We find that 48% of the articles demonstrating compromise choices in the top marketing journals (13 of the 27 articles published in *Journal of Consumer Research*, *Journal of Marketing Research*, *Journal of Marketing*, and *Marketing Science*) since the seminal work of Simonson (1989) demonstrate the compromise effect using stimuli that are more often chosen jointly than individually, such as consumer durables (e.g., cars, color TVs, air conditioners; Hamilton 2003; Larson and Billeter 2013; Prelec, Wernerfelt, and Zettelmeyer 1997; Simonson 1989; Yoon and Simonson 2008), apartments (Levav, Kivetz, and Cho 2010; Simonson 1989; Simonson and Nowlis 2000), hotel rooms (Briley, Morris, and Simonson 2000; Levav et al. 2010), vacation packages (Ha, Park, and Ahn 2009; Levav et al. 2010), and restaurants (Mourali, Böckenholt, and Laroche 2007). A further 26% of the articles contain stimuli that are equally likely to be purchased by individuals and dyads of decision makers such as electric grills (Khan, Zhu, and Kalra 2011; Simonson and Sela 2011) and printers (Larson and Billeter 2013; Yoon and Simonson 2008). However, these decisions are always presented as individual actions, and mechanisms are framed as individual processes. What can we say about compromise effects when choices are made jointly? Could a dyadic decision-making context change the dominance of the compromise effects?

We find that the answer to this question lies in the gender composition of the decision-making dyad. Compromise choices are observed as in prior research in the decisions of mixed-gender and female-female dyads but are attenuated in the joint choices made by two men. For example, the compromise effect might not emerge among pairs of male college students searching for an apartment, two male domestic partners choosing appliances, a father and son choosing a car together, two male friends deciding on a restaurant for dinner, pairs of male investment bankers selecting stocks, or a dyad of male managers making various corporate decisions together. We argue that when two men make a joint decision, they are prompted to dichotomize (Bosson and Michniewicz 2013)—that is, to make choices that are maximally atypical relative to feminine gender norms and maximally prototypical of male gender norms. Our data suggest that extremity in decision making serves this purpose, leading to higher levels of compromise alternative rejection than observed in both other dyad types or among male and female individual decision makers.

This article makes a number of important theoretical contributions. First, we provide the insight that joint decision contexts alter the magnitude of the compromise effect, demonstrating that the gender composition of the dyad is an important determinant of whether compromise behaviors emerge in such decisions. Because work in individual compromise choice tendencies had reported no gender effects, this finding enriches our understanding of this classic bias. Second, we contribute to recent studies of dyadic context effects (Boldt and Aurora 2015; de Clippel and Eliaz 2012). Importantly, our findings diverge from those made by theoretical economists (de Clippel and Eliaz 2012) who work under the assumption that compromise behaviors should be identical in joint as opposed to individual decisions (Boldt and Aurora 2015). Our findings suggest that this assumption may hold in any dyad that contains a female; however, it is questionable when two males make decisions together. Third, our work combines judgment and decision-making theory with insights from social psychology, where gender-based responses to social interaction are recognized to have profound influences on everyday behavior (Eagly and Wood 1991; Wood et al. 1997; Wood and Eagly 2012; Wood and Rhodes 1992). It may be that male-typical gender effects emerge in any decisions where social norms are activated; although we cannot speak to other context effects, our findings raise the importance of reconsidering established biases in socially intensive consumer situations.

Practically, our work also offers a number of interesting suggestions. Compromise effects and extremeness aversion have traditionally been used to push sales toward the more profitable item in a two-item set. When firms extend the price range upward through the addition of a third, more expensive alternative (Kivetz et al. 2004), the middle item garners more choice share. Our findings suggest that such strategies may yield predictable results for dyads in which a female is present. However, because two men making a decision together may be more likely to opt for either extreme option, the outcome of pushing sales toward the middle option may not materialize. Depending on whether the middle option is more or less profitable than other products, the absence of this outcome may be of benefit or detriment to retailers. Other practical uses of compromise tendencies for new product introduction, positioning, product assortments, product deletions, and competitive strategies (Kivetz et al. 2004; Lehmann and Pan 1994; Pan and Lehmann 1993; Simonson and Tversky 1992) may also be systematically more or less effective depending on the joint versus individual nature of the decision context and the gender of the decision makers.

THEORETICAL DEVELOPMENT

How would we expect that dyadic decisions would alter the magnitude of the compromise effect? One argument

might be that placing consumers in joint decision-making situations would simply reinforce compromise effects. As Simonson (1989) argues, compromise effects might become stronger when consumers are concerned about others' evaluation of their decisions because compromise options are seen as combining reasonable levels of both attributes under consideration and are viewed by consumers as "less likely to be criticized" (Simonson 1989). To the extent that joint dyadic decision making necessitates that each partner disclose their preferences, it creates an accountability context where the dyad partners might evaluate each other's positions (Tetlock 1983). Thus in the context of joint decision making, the compromise decision might become even more attractive because it seems the safest suggestion (Simonson 1989). Indeed, no prior research, to our knowledge, shows significant gender effects, suggesting that all decision makers are driven to the compromise options due to the same mechanism. Recent economics work has worked under this assumption, arguing that as in an individual context, compromise effects represent the resolution of intrapersonal conflict, whereas in a dyadic context, compromise effects would be evidence of a resolution of interpersonal conflict (de Clippel and Eliaz 2012). On this thinking, we should simply replicate compromise effects in dyads as in individuals.

However, we argue that this thinking ignores the importance of social influence on joint decision making. We propose that the dyadic decision-making context cues reliance on gender role beliefs—common societal expectations about the appropriate behaviors and traits of men and women (Broverman et al. 1972; Eagly 1987; Williams and Best 1982; Wood and Eagly 2010, 2012). Gender is the one personal characteristic that most quickly captures people's attention and provides the strongest basis for social judgment (Eagly, Wood, and Diekmann 2000). Consequently, gender role norms have been shown to be extremely powerful, are seen as among the most costly norms to violate, and are deeply internalized (Bem 1974; Eagly et al. 2000; Kite 2001; Rudman 1998; Rudman and Fairchild 2004; Spence and Helmreich 1978; Wood et al. 1997; Wood and Eagly 2010, 2012). In addition, gender-normative beliefs are usually easily and automatically activated in social contexts (Eagly et al. 2000).

However, recent research suggests that the presence of another individual activates the desire to behave in gender-normative ways differently for men as for women. First, consider the case of male-male dyads. Recent research argues that the male identity is precarious—that manhood is hard to attain and easy to lose via social transgressions and shortcomings (Bosson and Vandello 2011; Gilmore 1990; Vandello et al. 2008). In other words, masculine status is "earned and conferred socially" (Bosson and Vandello 2011, 82). Vandello et al. (2008) confirmed these beliefs about manhood as impermanent socially constructed status among contemporary US college students by demonstrating

that they expressed stronger agreement and preference for statements about elusive manhood (e.g., "Manhood is hard won and easily lost") than similar statements about elusive womanhood. In addition, when asked how a man might lose his manhood, participants generated more social reasons ("unable to support a family") than physical reasons ("became ill"). Importantly, evolutionary theories suggest that the precarious nature of manhood is due to evolved adaptations to an environment in which men constantly had to compete with other men, demonstrating their manhood through public actions in front of other men to attract fertile female partners (Buss and Schmitt 1993; Geary 1998; Trivers 1972). Therefore, based on these evolutionary theories, it could be inferred that men will be particularly likely to engage in actions that demonstrate their masculinity in the presence of other men (but not women). Additional support for this also comes from research demonstrating that men's actions are evaluated in light of the precarious manhood beliefs by other men but not by other women (Weaver et al. 2010), suggesting that men might be more attuned to the precarious nature of their masculinity when making decisions with other men than women, thus prompting them to engage in behaviors that prove their manhood to one another.

Consequently, we expect that men are more likely to take actions that establish their manhood when they are making decisions with other males. Past research suggests that this is typically accomplished via dichotomization—rejecting behaviors and traits consistent with femininity and instead, embracing behaviors and traits consistent with masculinity (Bosson and Michniewicz 2013). For instance, Bosson and Michniewicz (2013) demonstrate that when men are reminded that their manhood is precarious, they rate feminine (masculine) traits as less (more) central to their identity. In contrast, gender status loss threats did not have any effect on women's tendency to renounce masculine traits from their in-group identity.

We propose that such gender dichotomization will affect choices of compromise options in dyads: female gender norms would dictate compromise decisions—those that are balanced, reflect compromise, and are as close as possible to a "golden middle" (Balkan 1966; Bem 1974; Broverman et al. 1972; Deaux and Lewis 1984; Eagly et al. 2000; Rosenwasser and Dean 1989; Spence and Helmreich 1978; Williams and Best 1982; Wood and Eagly 2010, 2012). To oppose such feminine norms, we anticipate that the two male decision makers would push away from the compromise option. In contrast to femininity-normed decisions, they would prefer options that express extremity or maximizing, and would reject those that might be construed as moderate (Balkan 1966; Eagly et al. 2000; Wood and Eagly 2010, 2012). If males respond to the social nature of dyadic decisions in this way, the male-male dyads should not show biases toward compromise options. Rather, the extremity aversion observed when men make decisions

alone should be attenuated when they are making decisions in a dyad.

Gender dichotomization, however, should not emerge in the case of dyads composed of two females. Unlike men, research suggests that women do not generally feel a strong need to signal their femininity, either to other women or to men, because womanhood is not precarious; a woman's actions in social interactions do not challenge her status as a "real woman" (Bosson and Michniewicz 2013; Bosson and Vandello 2011; Vandello et al. 2008). Gilmore (1990, 12) notes that "an authentic femininity rarely involves tests or proofs of action," and thus femininity does not require the same level of public defense (Bosson and Vandello 2011; Vandello et al. 2008; Weaver et al. 2010). For example, Vandello et al. (2008) demonstrate that people perceive womanhood as a relatively enduring physical state, unlikely to be undermined by social changes. Thus there is little reason to believe that women will change their baseline compromise tendencies when making a decision with another woman as opposed to making decisions alone.

The most interesting case is perhaps the mixed-gender dyad. On one hand, gender-normative beliefs about the desirability of extreme choices as masculinity signals might prompt the male decision maker to steer the joint choice toward one of the extreme options. This thinking would suggest that the compromise effect should not emerge in the decisions of mixed-gender dyads. However, note that when a male is in the presence of a female, there is no need to undertake a dichotomization process: first, the clear gender differences between the partners highlight masculinity and femininity, respectively (Buss and Schmitt 1993; Geary 1998; Trivers 1972). Second and more importantly, the evolutionary theories of the precarious nature of manhood suggest that men's desire to prove their masculinity is more salient in their interactions with other men (rather than women) due to their evolved adaptations to an environment in which men constantly had to compete with other men (Buss and Schmitt 1993; Geary 1998; Trivers 1972). Thus men in mixed-gender dyads would not need to engage in dichotomization to prove manhood and would be likely to display the same propensity toward compromise alternatives as they would when making decisions individually. Such an argument would be consistent with prior work that concludes men exhibit less male-sex-typed behaviors in their interactions with members of the opposite sex (Pilivian and Martin (1978). In a related vein, past research demonstrates that when paired with a woman, men conform to the behaviors they expect from their female partners (Carli 1989; Hall 1984). Thus we argue that in male-female dyads, both the male and female decision makers would lean toward the compromise option (just as they would do in their individual decisions); the compromise effect should emerge in the joint decisions of mixed-gender dyads.

In sum, we predict that male-male dyads will exhibit lower preferences for compromise options relative to

female-female dyads, mixed-gender dyads, as well as male and female individuals. We test our theory in five studies. Using stimuli from prior research, studies 1 and 2 demonstrate that the compromise effect emerges in equivalent proportion among individuals, mixed-gender and female-female dyads, but it does not emerge in male-male dyads. Study 3 replicates this pattern using semi-consequential choices. Study 4 uses assessments of a focal decision maker to gain insights into the process that drives male-male dyads to disapprove of compromise options (following Briley et al. 2000). Here, we observe that men judge other men more harshly when they suggest a compromise option to a male decision-making partner than they do if the same option is suggested by men to a female decision-making partner. However, women do not exhibit such differences in their judgments of male and female decision makers making joint decisions regardless of their decision-making partner's gender. Further, we provide evidence suggesting that the preference for extremity, but not the drive for dominance, risk seeking, or other male-normative behaviors, reliably mediates men's disapproval of a compromise choice in male-male dyads. We apply these findings in study 5, where we reclaim compromise effects in male-male dyads. Here, results suggest that when men have an opportunity to make an extremity-signaling decision before making the focal dyadic choice, male-male dyads show compromise choice patterns equivalent to female-female dyads.

We note that prior research on the compromise effect has captured the phenomenon using three different methods (Neumann et al. 2016): absolute-share changes (comparing the choice share of an option before and after it becomes a compromise option; Simonson 1989); relative-share changes (similar to absolute-share changes with the exception that only the shares of options present in both choice sets are taken into account; Simonson and Tversky 1992), and middle proportions (using the choice share of the middle option in a choice set; Simonson and Nowlis 2000). We use two of these three well-established methods for capturing the compromise effect in our studies (the "middle-proportions" approach in studies 1, 3, and 5 and the "relative-share changes" approach in study 2).

STUDY 1: DO MALE-MALE DYADS EXHIBIT THE COMPROMISE EFFECT?

Study 1 tests our main prediction: male-male dyads will be less likely to select compromise options than both mixed-gender and female-female dyads. In this study we also include male and female individual decision makers so that we can examine how the different dyads' choice tendencies compare to those of individuals. This inclusion is important because it allows us to rule out the idea that women and men systematically differ in the importance they place on the two attributes by which our particular

stimuli are described. If, a priori, men care less about one of the attributes than do women, we should see that both male-male dyads and male individuals are less likely to choose the compromise option than the other two types of dyads and female individuals (i.e., they would be more likely to choose the extreme option that has the best performance on their most important attribute). In contrast, if the need to display extremity drives the aversion to the compromise alternative in male-male dyads as we have argued, then the tendency to choose the compromise option should emerge in the choices of male individuals as in prior literature.

Method

Study 1 used a five-group (male-male dyads, male-female dyads, female-female dyads, male individuals, female individuals) between-subjects design. Participants (n = 241, 38% male) were students at a large public university who completed the study in exchange for course credit. Before this study began, some participants were paired by the lab administrator into the three types of dyads: male-male (n = 20), male-female (n = 32), and female-female (n = 43) dyads. Other participants (20 males and 31 females) worked on the study individually. In this and all subsequent studies, participants assigned to the dyads conditions were paired randomly with another participant from the same session inasmuch as possible while still attempting to balance the number of dyads created of each type. The unequal cell sizes in some studies result from the particular gender composition in each session. Furthermore, in all studies the dyads were instructed to work together and were provided with only one set of study materials to ensure that they followed instructions and made joint choices.

All participants were asked to imagine that they were choosing from a set of three grills that differed on two attributes, cooking area and weight (all stimuli are available in online appendix B; the choice stimuli used in this study are from Simonson and Sela 2011). Following prior research (Briley et al. 2000; Khan et al. 2011, study 4; Murali et al. 2007, studies 2 and 3; Simonson and Sela 2011), the choice set was constructed so that one item represented the compromise option, not dominating on either attribute provided but instead falling between two more extreme options, both of which were dominated on one attribute. Participants first indicated which grill they would buy. Then they also indicated the likelihood of buying each of the three options using a 7 point scale anchored by 1 = Very unlikely and 7 = Very likely. Finally, participants provided their demographic information.

Analysis and Results

In all studies partial data were provided by some respondents on some variables; where data are available, they are included in the analyses.

Gender Dyads. Our analysis of the compromise effect follows Simonson and Sela (2011) and Khan et al. (2011, study 4). We conducted a logistic regression predicting participants' grill choice (coded as 1 if the middle option was chosen and 0 otherwise). Results revealed a main effect of dyad type, Wald $\chi^2(2) = 6.14, p = .05$. The male-male dyads were less likely to select the compromise option than both male-female ($b = -1.19, \exp(b) = .30, \text{Wald } \chi^2(1) = 4.03, p = .04$) and female-female dyads ($b = -1.35, \exp(b) = .26, \text{Wald } \chi^2(1) = 5.66, p = .02$). There was no difference in the choices of the mixed-gender and female dyads ($p = .75$). All choice shares are displayed in table 1.

We also conducted a one-way analysis of variance (ANOVA) on the likelihood of purchasing the compromise option that revealed a significant main effect of the dyad type, $F(2, 92) = 5.97, p = .004, \eta^2 = .11$. The male-male dyads ($M = 4.25, SD = 1.55$) were less likely to purchase the middle option than both the mixed-gender ($M = 5.31, SD = 1.31; F(1, 92) = 7.13, p = .009, \eta^2 = .07$) and female-female dyads ($M = 5.53, SD = 1.39; F(1, 92) = 11.56, p = .001, \eta^2 = .11$). There was no difference between the latter two types of dyads ($p = .50$).

Individual Decision Makers. We then compared the choices of the three different dyads to those of male and female individual decision makers. Results indicated that male-male dyads were less likely to select the compromise option than both male ($b = -1.25, \exp(b) = .29, \text{Wald } \chi^2(1) = 3.52, p = .06$) and female ($b = -1.46, \exp(b) = .23, \text{Wald } \chi^2(1) = 5.67, p = .02$) individual decision makers. There was no difference among the choices of mixed-gender dyads, female-female dyads, and male and female individual decision makers (all p 's > .63).

A one-way ANOVA on the likelihood of purchasing the compromise option yielded similar results: the male dyads indicated lower likelihood of purchasing the middle option than the male ($M = 5.40, SD = 1.19; F(1, 141) = 6.38, p = .01, \eta^2 = .04$) and female ($M = 5.16, SD = 1.70; F(1, 141) = 4.87, p = .03, \eta^2 = .03$) individuals. There was no difference in the likelihood of purchasing the compromise option among male-female dyads,

TABLE 1
STUDY 1: CHOICE SHARES

	% Choosing grill A	% Choosing grill B	% Choosing grill C
Male-male dyads	10	40	50
Male-female dyads	6.2	68.8	25
Female-female dyads	20.9	72.1	7
Male individuals	15	70	15
Female individuals	22.6	74.2	3.2

female-female dyads, and male and female individuals (all p 's $> .27$).

Discussion

Study 1 shows that male-male pairs were less likely to select the compromise option in the choice set of grills than were male-female and female-female pairs, using either forced choice or continuous choice likelihood measures. However, there was no difference in the susceptibility to the compromise effect between the latter two types of dyads. Furthermore, dyads consisting of two male partners were less likely to select the compromise option than both male and female individual decision makers, suggesting that the differences in susceptibility to the compromise effect among the three dyads are not driven by inherent differences in the attribute weighting of men and women. Finally, it is worth noting that the results of study 1 provide some preliminary evidence of the underlying mechanism: in male-male dyads the decreased choice share of the middle, compromise option appears to be driven by a significant increase of the choice share of the "larger, heavier" grill option (option C; 50% of male-male dyads chose option C versus only 15% of male individuals). These findings suggest that the male-male dyads' aversion to the compromise option might indeed be driven by their desire to engage in dichotomization, assuming that the choice of the larger, heavier grill (rather than the smaller, lighter one) represents a behavior that is maximally inconsistent with femininity and consistent with masculinity (Bosson and Michniewicz 2013).

One limitation of this study is the relatively small number of dyads in each condition. This limitation is addressed in the next study. Furthermore, in study 2 we replicate the results of study 1 with a slightly different but well-established method of measuring the magnitude of the compromise effect. Specifically, we examine the change of the compromise option choice share between a core (two-item) and extended (three-item) set (following Murali et al. 2007).

STUDY 2: REPLICATION USING CORE AND EXTENDED CHOICE SETS

Method

Study 2 followed a 5 (decision maker: male-male dyads, female-male dyads, female-female dyads, male individuals, female individuals) \times 2 (choice set: core vs. extended) between-subjects design. Participants ($n = 511$, 42% male) were undergraduate students at two US universities who completed the study in exchange for course credit. Controlling for the source of the data does not

change the results; for parsimony, we do not use data source as a covariate in any analyses.

As in study 1, participants completed the study either individually ($n = 56$ male participants and 69 female participants) or jointly with another session participant ($n = 193$ dyads). Participants in the dyad conditions were paired by the lab administrator to create the three different types of dyads: male-male ($n = 49$), male-female ($n = 60$), and female-female ($n = 84$). All participants were then asked to imagine that they were buying a printer and were randomly assigned to one of the two choice set conditions (Murali et al. 2007). In the core set, participants chose between two brands of printers (A, B), whereas in the extended set, participants selected among three brands (A, B, C) (online appendix B). Participants indicated their choice and rated the printers' attractiveness (Murali et al. 2007). Participants' gender was collected at the end of the experiment.

Analysis and Results

In this study, we test the magnitude of the compromise effect by examining the change in the compromise option choice share between the core and extended sets (as in Chernev 2004; Murali et al. 2007; Simonson and Tversky 1992). As in Murali et al. (2007), to do this we need the following pieces of information: the share of the compromise option (brand B) in the core set ($P(B; A)$); the share of brand A in the core set ($P(A; B)$); the share of the compromise option (brand B) in the extended set ($P(B; A, C)$); the share of brand A in the extended set ($P(A; B, C)$); the share of brand B relative to brand A in the extended set ($P_c(B; A) = P(B; A, C) / [P(B; A, C) + P(A; B, C)]$). Then we calculate the magnitude of the compromise effect (ΔP_b) by subtracting the share of brand B in the core set ($P(B; A)$) from the share of brand B relative to brand A in the extended set ($P_c(B; A)$). This gives us the change in the choice share of brand B relative to brand A resulting from the addition of brand C to the core set. We report all choice shares, the size of the compromise effect, and its statistical significance for all conditions in table 2.

Gender Dyads. Following the more conservative approach of Murali et al (2007), we deleted nine observations in which brand C was selected because the compromise effect is the change in the choice share of brand B relative to brand A. We then conducted a logistic regression in which the dyads' printer choice (codes as 1 if brand B was chosen and 0 otherwise) was predicted by the dyad type, the choice set condition, and their interaction. The results indicated a significant main effect of dyad type (Wald $\chi^2(2) = 12.08, p = .002$), which was qualified by a significant interaction of dyad type \times choice set condition (Wald $\chi^2(2) = 6.70, p = .04$); the main effect of choice set condition was not significant ($p = 1$).

TABLE 2
STUDY 2: COMPROMISE EFFECT ACROSS DIFFERENT CONDITIONS

Shares (%)	Male-male dyads	Male-female dyads	Female-female dyads	Male individuals	Female individuals
$p(A; B)$	87.5	90.0	90.0	82.8	85.3
$p(B; A)$	12.5	10.0	10.0	17.2	14.7
$p(A; B, C)$	84.0	33.3	38.6	37.0	28.6
$p(B; A, C)$	12.0	50.0	54.6	51.9	57.1
$p(C; A, B)$	4.0	16.7	6.8	11.1	14.3
$\rho_c(B; A)$	12.5	60.0	58.6	58.4	66.6
$\Delta\rho_b$	0	50.0	48.6	41.2	51.9
$\chi^2(1)$	0	12.61	17.08	8.79	15.62
p value	1.0	.0004	<.0001	.003	<.0001

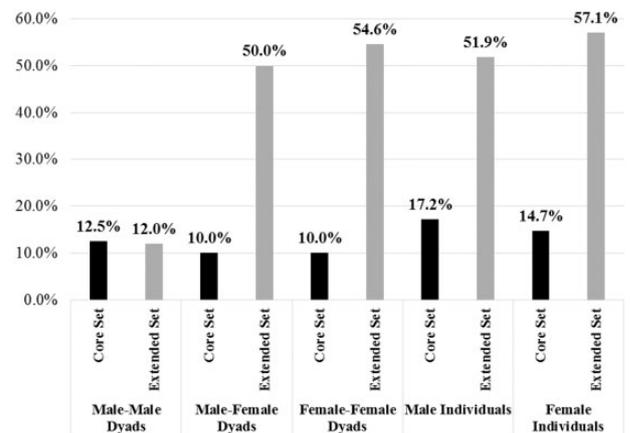
Planned contrasts revealed that for both male-female ($b = 2.60$, Wald $\chi^2(1) = 12.61$, $p = .0004$) and female-female dyads ($b = 2.54$, Wald $\chi^2(1) = 17.08$, $p < .0001$), the likelihood of choosing the compromise option was higher in the extended than the core set, consistent with the compromise effect. However, there was no difference in the likelihood of choosing the compromise option between the core and extended sets for male-male dyads ($p = 1$). The percentages of dyads choosing brand B in each condition are displayed in figure 1.

An analysis of the attractiveness ratings reinforces these results. As in Murali et al. (2007), to measure the compromise effect we created an index of relative attractiveness of the compromise option (brand B) by subtracting the attractiveness rating of brand A from the attractiveness rating of brand B. We conducted a two-way ANOVA on the relative attractiveness of brand B predicted by the dyad condition, the choice set condition, and their interaction. Results indicate a significant main effect of the choice set condition ($F(1, 178) = 24.20$, $p < .0001$) and a significant main effect of dyad condition ($F(2, 178) = 6.92$, $p = .001$). Most importantly, these main effects were qualified by a significant dyad \times choice set interaction ($F(2, 178) = 3.45$, $p = .03$).

Planned comparisons demonstrated that the relative attractiveness of the compromise brand was significantly higher in the extended than in the core set for both mixed-gender dyads ($M_{ext} = .56$, $SD = 1.96$ vs. $M_{core} = -.93$, $SD = .94$, $F(1, 178) = 16.40$, $p < .0001$) and female-female dyads ($M_{ext} = .44$, $SD = 1.66$ vs. $M_{core} = -.90$, $SD = .98$, $F(1, 178) = 19.58$, $p < .0001$). However, for male-male dyads there was no difference in the relative attractiveness of brand B between the core and extended choice sets ($M_{ext} = -.96$, $SD = 1.37$ vs. $M_{core} = -1.17$, $SD = .96$, $p = .60$). Similar results were obtained when we used the raw attractiveness score of brand B as the dependent variable in the ANOVA analysis; details are available from the authors.

Individual Decision Makers. As anticipated, the likelihood of choosing the compromise option was higher in the

FIGURE 1
STUDY 2: PERCENTAGE CHOOSING BRAND B



NOTE.—The figure displays the percentages of pairs/individuals choosing the compromise option in each condition before we deleted any participants who selected option C (as suggested by Murali et al. 2007).

extended than in the core set for both male ($b = 1.91$, Wald $\chi^2(1) = 8.79$, $p = .003$) and female individual decision makers ($b = 2.45$, Wald $\chi^2(1) = 15.62$, $p < .0001$). Furthermore, in the core set, the male individuals' likelihood of selecting the compromise option was not significantly different from that of male-male, male-female, and female-female dyads (all p 's $> .38$); however, in the extended set, the male individuals' likelihood of choosing the compromise alternative was significantly higher than that of male-male dyads ($b = 2.28$, Wald $\chi^2(1) = 9.43$, $p = .002$) and not significantly different from that of male-female and female-female dyads (both p 's $> .90$). Similarly, the female individuals' tendency to choose the compromise option was not different from that of the three types of dyads in the core set (all p 's $> .57$); in the extended set, female individuals were significantly more likely to select the compromise alternative than male-male

dyads ($b = 2.54$, Wald $\chi^2(1) = 12.40$, $p < .001$) and not different from mixed-gender and female-female dyads (both p 's $> .60$).

An analysis of the relative attractiveness of brand B yielded similar results. The relative attractiveness of brand B was higher in the extended set than the core set for both male ($M_{\text{ext}} = .21$, $SD = 1.72$ vs. $M_{\text{core}} = -.83$, $SD = 1.42$, $F(1, 51) = 5.79$, $p = .02$) and female individuals ($M_{\text{ext}} = .43$, $SD = 1.55$ vs. $M_{\text{core}} = -1.42$, $SD = 1.64$, $F(1, 61) = 21.28$, $p < .0001$). Furthermore, in the core set, there was no difference in the relative attractiveness of brand B between male individuals and the three types of dyads (all p 's $> .39$), as well as between female individuals and the three gender dyads (all p 's $> .11$); in the extended set, the relative attractiveness of brand B for male-male dyads was significantly lower than that of male individuals ($F(1, 292) = 7.79$, $p = .006$) and female individuals ($F(1, 292) = 11.69$, $p < .001$); however, in the extended set, there was no difference in the relative attractiveness of brand B between male individuals and mixed-gender and female-female dyads (both p 's $> .39$), as well as between female individuals and the two latter types of dyads (both p 's $> .65$).

Discussion

Study 2 replicates study 1's results using an alternate method of capturing the compromise effect. The compromise effect was observed in mixed-gender and female-female dyads, as well as male and female individual decision makers. However, we do not observe tendencies toward the compromise choice in male-male dyads because the choice share of the compromise option did not increase in the extended choice set relative to the core set. In addition, the fact that the compromise effect emerges among male individuals but not male-male dyads suggests that the differences in the dyadic compromise effect among the three gender dyads are not driven by differences in men's preferences in the printer category, but rather by the joint decision context.

One limitation of study 2 is that the choice share of option B in the core set is consistently low (10–17.2%) across all conditions, which suggests a dominating preference for option A (vs. B) and the prominence of cost (vs. quality) attribute (we thank an anonymous reviewer for noting this). While we acknowledge that this differs from a key premise of the compromise effect, that is, preference uncertainty (i.e., no dominating preference between options A and B, or no dominating preference for one attribute over the other), we believe that the prominence of the cost (vs. quality) attribute cannot explain the difference in the compromise effect magnitude among the three gender dyads because it is constant across all conditions; in addition, the consistently low choice share of option B in the core set makes study 2 a rather conservative test of our hypothesis because there is more latitude for the choice share

of option B to increase in the extended set than if its choice share were larger in the core set in the first place. The fact we do not see the compromise effect in the joint decisions of male-male dyads even in such conditions is rather encouraging. However, in the following studies we provide additional evidence using different choice stimuli. Furthermore, since the decisions in the first two studies were scenario based, one could argue that the effects are driven by participants' expectations about their behavior, rather than their actual behaviors. Therefore, in the next study, we replicate these findings with semi-consequential choices.

STUDY 3: REPLICATION USING SEMI-CONSEQUENTIAL CHOICES

Method

Study 3 used a three-cell design (dyad: male-male, male-female, and female-female). Participants ($n = 372$, 40% male) were undergraduate students at two US universities who completed the study for a small payment or course credit. Controlling for the data source/compensation does not substantively change the results; therefore, we do not include this covariate in the analysis.

Participants first completed a set of unrelated tasks. Then the lab administrator paired participants to create the three gender types of dyads: male-male ($n = 46$), male-female ($n = 57$), and female-female dyads ($n = 83$). The dyads were told that they would work together on the final part of the study, in which they would select prizes for their participation in the session. Specifically, the dyads were notified that as a reward for their participation in the session, they would be entered into lotteries for two prizes (a restaurant gift card and a pair of headphones) and that one randomly selected pair would receive their selected prize in each lottery. We told the dyads that both individuals in the dyad would receive the same prize if they were the winners of the lottery and that they should make the decisions together.

First, the dyads were asked to select among gift cards for three restaurants that differed on entrée price and wait time (online appendix B). The dyads were then told that the second lottery would be for a pair of headphones and were asked to select again among three different pairs of headphones that differed on durability and compatibility with other devices (online appendix B). Finally, participants provided their demographic information.

Given the robust findings about the comparisons of the three gender dyads with individual decision makers in studies 1 and 2, we did not include the individual decision-maker conditions in any of the subsequent studies. However, two posttests conducted with undergraduate students revealed that male and female students did not differ in the relative importance they placed on the two attributes

used to construct the new choice stimuli used in each of the subsequent studies (online appendix C), thus arguing against the idea that the differences in the compromise behavior of the different gender dyads are driven by systematic gender differences in relative attribute importance.

Analysis and Results

We excluded five dyads where one or both of the partners in each dyad inadvertently started the prize selection before being paired with another participant and thus were exposed to the prize choices before making these choices jointly with their partner. Including these five dyads in the analysis does not substantively change the results.

In this study our data had a hierarchical structure because each dyad made two joint decisions: the dyad choices (the level-1 observations) were nested within the dyads (the level-2 observations). Therefore, we used PROC GLIMMIX in SAS to estimate a two-level logistic regression model using the Maximum Likelihood with Laplace Approximation estimation method (Raudenbush et al. 2001; as used by Mourali et al. 2007). We note that PROC GLIMMIX used the default containment method to compute the denominator degrees of freedom. In the two-level logistic regression model, the dyads' choices (coded as 1 if the compromise option was selected and 0 otherwise) were predicted by the dyad type at level 2. Results indicated a significant effect of dyad type ($F(2, 181) = 3.05, p = .05$). Planned contrasts demonstrated that both female-female dyads ($b = .49, t(181) = 1.82, p = .07$) and mixed-gender dyads ($b = .72, t(181) = 2.40, p = .02$) were more likely to select the middle prize in the choice sets than male-male dyads. There was no difference in the likelihood of choosing the compromise option between the former two types of dyads ($p = .39$). Controlling for the type of prize (restaurant gift card or headphones) in the model does not change these results. Furthermore, the cross-level interaction of prize type and dyad type was also not significant ($p = .37$). The choice shares are displayed in table 3.

TABLE 3

STUDY 3: CHOICE SHARES

	% Choosing option A	% Choosing option B	% Choosing option C
Male-male dyads	25	53.3	21.7
Male-female dyads	17.3	70	12.7
Female-female dyads	20	65	15

NOTE.—We follow Simonson and Nowlis's recommendation (2000) in reporting the average choice shares across the two choice sets (restaurants and headphones). Per Simonson and Nowlis (2000), the average choice share of the middle option across the two categories is an indicator of the compromise tendency.

Discussion

Study 3 replicates our pattern of effects using real choices: pairs consisting of two male partners were less likely to select study prizes that represented the compromise option in the given choice sets than pairs that included a male and a female partner or two female partners. The next two studies provide evidence of the mechanism underlying the male-male dyads' aversion to the compromise option.

STUDY 4: DEMONSTRATING THE EXTREMITY NORM IN MALE-MALE DYADS

We have argued that the outcomes observed in our studies thus far are related to the tendency of male decision makers to dichotomize when making decisions with other men. While we have argued that selecting an extreme option offers the most straightforward means of dichotomization in this context, there might be other explanations for similar patterns of effects. For example, because risk aversion is generally lower among men than women (Byrnes, Miller, and Schäfer 1999), it may be that in a dyadic situation, the male partners' combined openness to risk reduces the appeal of a compromise option. It is also possible that male norms like boldness, courage, strength, or interpersonal dominance are captured in noncompromise choices (Eagly, Wood, and Fishbaugh 1981; Ridgeway 1981; Wood and Eagly 2010, 2012).

Testing the roles of these various norms presents something of a challenge because male individuals may struggle to introspect about the tendency to dichotomize. Indeed, when considering their own behavior, men may see various masculine-typical behaviors that allow them to establish their manhood as essentially interchangeable (Bosson and Michniewicz 2013). To attempt to gain more precision in the identification of the specific gender role norms that may mediate our effect, we therefore use a projective scenario where participants are in the position of evaluating others' behavior. Our use of a projective scenario approach to demonstrate process follows Briley et al. (2000), who used a similar method to provide evidence of the mechanism underlying cultural influences on the compromise effect. We also include direct measures of multiple potential explanatory factors to see if we can pinpoint the norm that best explains differences in men's acceptance of compromise options.

Method

Study 4 used a 2 (gender of focal decision maker in the scenario: male, female) × 2 (gender of the joint decision-making partner in the scenario: male, female) × 2 (participant's gender: male, female), with the first two

between-subjects factors manipulated and the third factor measured at the end of the experiment. Participants ($n = 673$; 56% male) were recruited via an online panel and received a small payment as a compensation for the study completion.

Participants imagined a scenario in which a male/female individual Matthew/Mary (the focal decision maker) was making a joint decision with a 30-year old male/female individual John/Jenny (the decision-making partner in the scenario). They were currently looking to invest some of the company's profits in stock and had to choose among three different stocks: Stock A is the least risky stock and offers the lowest return; stock C has the highest risk but also offers the highest potential return; stock B has average risk and average return among the three types of stock. The focal decision maker, Matthew/Mary, suggested that they invest in stock B (the compromise option). The full text of the scenario can be found in online appendix D, panel A.

After reading the scenario, we asked participants to first evaluate the focal character's suggestion to choose stock B using two items: "How do you respond to Matthew's (Mary's) suggestion?" (1 = Very negatively; 5 = Very positively) and "To what extent would you strongly disapprove (1) to strongly approve (5) of Matthew's (Mary's) suggestion?" (1 = Strongly disapprove; 5 = Strongly approve). Participants' responses to these two questions were averaged ($r = .74$, $p < .0001$). Following their evaluation of the decision-making character's recommendation, participants also rated their agreement with a set of items designed to capture the drivers behind their evaluation, such as beliefs about the character's indecisiveness, desired choice extremity, character's lack of courage, lack of strength, independence, interpersonal dominance, accommodation of partner's preferences, choice riskiness, and perceptions that the character should have been more risk seeking in his/her recommendation. All items can be found in online appendix D, panel B. At the end of the experiment, participants responded to three manipulation check questions (which asked them to identify the gender of the focal character in the scenario, the gender of the partner in the scenario, and which stock option was recommended) and provided their demographic information.

Using this design, we can observe participants' evaluation of the focal character's suggestion to make a compromise choice. Based on our theory, these evaluations should vary based on the genders of the participant, the focal decision maker, and their decision-making partner. Specifically, in line with Weaver et al. (2010), we anticipated that only our male (but not female) participants' evaluations of the male character would change depending on whether they were making a decision with a male or female partner because only the male-male context would activate the dichotomization that dictates against the compromise choice. Thus we should find that men evaluate

the male focal character's suggestion to choose the compromise option more negatively when it is expressed in the joint decision with a male partner (male-male dyads) rather than with a female partner (male-female dyads). However, we did not expect to see any differences in the male and female participants' evaluations of the female character's compromise suggestion regardless of whether the joint decision was made with a male or female partner. Further, in line with our dichotomization theory, we anticipated that the choice extremity beliefs would drive male participants' evaluation of the male decision-making character making the joint decision with a male or female partner.

Analysis and Results

We excluded from all analyses 37 participants who failed the manipulation instructions checks (Oppenheimer, Meyvis, and Davidenko 2009).

Recommendation Evaluation. We conducted a three-way ANOVA on participants' evaluations of the decision-making character's compromising tendency predicted by the gender of the decision maker, the gender of his/her joint decision-making partner, the participant's gender, all two-way interactions, and the three-way interaction. Table 4 shows all means and SDs. Results revealed a significant main effect of participant's gender ($F(1, 628) = 9.62$, $p = .002$) and a marginally significant main effect of partner's gender ($F(1, 628) = 2.78$, $p = .10$). The three-way interaction of participant's gender \times focal decision maker's gender \times partner's gender was not significant according to traditional significance levels ($F(1, 628) = 2.18$, $p = .14$). However, because our predictions concern only participant's evaluations of the male decision maker in the scenario (while expecting null effects for the female decision maker), we examine the two-way interaction of participant's gender \times the gender of the decision-making partner separately for the male and female focal decision-maker conditions.

Evaluations of the Male Decision Maker. When the focal decision maker in the scenario was a male, we find a marginally significant main effect of participant's gender ($F(1, 317) = 3.16$, $p = .08$), which was qualified by a significant interaction of participant's gender and gender of the decision-making partner in the scenario ($F(1, 317) = 4.90$, $p = .03$). Consistent with our theory, planned contrasts revealed that male participants evaluated the male decision maker's compromise choice more negatively when he suggested this option in his joint decision with another male partner ($M = 3.99$, $SD = .85$) than with a female partner ($M = 4.32$, $SD = .74$, $F(1, 317) = 7.51$, $p = .007$). However, female participants' evaluations of the compromise suggestion of the male character did not differ when the suggestion was made in the presence of a male

TABLE 4
STUDY 4: MEANS AND STANDARD DEVIATIONS

Focal decision maker's gender	Decision-making partner's gender	Participant's gender	Choice approval	Desired extremity	Indecisiveness	Lack of courage	Lack of strength	Independence
Male	Male	Male	3.99 (.85)	2.41 (1.30)	2.57 (1.15)	2.76 (1.37)	2.59 (1.20)	4.52 (1.39)
	Female	Male	4.32 (.74)	2.03 (1.18)	2.33 (1.13)	2.52 (1.18)	2.32 (1.13)	5.03 (1.45)
	Male	Female	4.35 (.71)	2.19 (1.21)	2.26 (.97)	2.52 (1.29)	2.13 (.99)	4.73 (1.60)
	Female	Female	4.28 (.81)	2.08 (1.23)	2.08 (.96)	2.26 (1.28)	1.94 (.94)	4.81 (1.58)
Female	Male	Male	4.06 (.85)	2.06 (1.09)	2.41 (1.08)	2.52 (1.17)	2.36 (.98)	5.28 (1.19)
	Female	Male	4.16 (.76)	2.43 (1.44)	2.61 (1.26)	2.71 (1.44)	2.38 (1.16)	5.06 (1.46)
	Male	Female	4.31 (.85)	1.97 (.91)	2.13 (.79)	2.49 (.98)	2.08 (.84)	5.04 (1.39)
	Female	Female	4.39 (.73)	2.21 (1.53)	2.17 (1.11)	2.56 (1.53)	2.15 (1.07)	5.15 (1.55)
Focal decision maker's gender	Decision-making partner's gender	Participant's gender	Interpersonal dominance	Accommodating partner's preferences	Choice perceived risk	Choice should be more risk seeking		
Male	Male	Male	3.11 (.89)	3.86 (.95)	3.38 (1.11)	4.04 (1.06)		
	Female	Male	2.82 (.93)	3.74 (1.04)	3.40 (1.10)	4.37 (1.11)		
	Male	Female	2.79 (.95)	3.83 (1.20)	3.14 (1.08)	4.37 (1.01)		
	Female	Female	2.73 (.91)	3.29 (1.12)	3.17 (1.08)	3.90 (1.01)		
Female	Male	Male	2.86 (.94)	3.49 (1.30)	3.40 (1.01)	3.94 (1.09)		
	Female	Male	3.02 (.96)	3.79 (1.21)	3.40 (1.16)	4.03 (1.08)		
	Male	Female	2.81 (.75)	3.16 (1.21)	3.12 (1.11)	3.71 (1.17)		
	Female	Female	2.60 (.85)	3.46 (1.27)	3.07 (1.08)	3.85 (1.30)		

NOTE.—The standard deviations are displayed in parentheses.

($M = 4.35$, $SD = .71$) or female partner ($M = 4.28$, $SD = .81$, $p = .61$).

Evaluations of the Female Decision Maker. When the focal decision maker in the scenario was a female, a two-way ANOVA revealed a significant main effect of participant's gender ($M_{\text{male}} = 4.11$, $SD = .80$, $M_{\text{female}} = 4.35$, $SD = .79$, $F(1, 311) = 6.75$, $p = .01$); the main effect of the gender of the decision-making partner was not significant ($p = .36$). Importantly, the interaction of participant's gender \times partner's gender was not significant ($p = .93$). This suggests that male and female participants' the evaluations of the female decision maker's compromise suggestion were similar no matter whether her compromise option preference was expressed to a male or female joint decision-making partner.

Evaluation Drivers. We conducted separate three-way ANOVAs on all potential mediators of the participants' evaluation as predicted by the participant's gender, the focal decision maker's gender, the partner's gender, all two-way interactions, and the three-way interaction. All results are displayed in online appendix E; all means and SDs can be found in table 4.

For the sake of brevity, we only discuss the results pertaining to the focal contrast of interest in all analyses, that is, male participants' perceptions of the male decision maker who recommends the compromise choice in the joint decision with a male or female partner. Results suggest that male participants believed to a greater extent that the focal decision maker's recommendation should have been more extreme when making a decision with a male partner ($M = 2.41$, $SD = 1.30$) than a female partner

($M = 2.03$, $SD = 1.18$, $F(1, 630) = 3.93$, $p = .05$). Male participants also associated a greater level of dominance in the compromise recommendation of the male character when it was made in front of a male partner ($M = 3.11$, $SD = .89$) than a female partner ($M = 2.82$, $SD = .93$, $F(1, 630) = 4.46$, $p = .04$), and felt marginally more as though the male decision maker should have exhibited more strength when making a decision with a male ($M = 2.59$, $SD = 1.20$) than a female partner ($M = 2.32$, $SD = 1.13$, $F(1, 630) = 2.96$, $p = .09$). Finally, male participants indicated that the male decision maker should have been more independent and more risk seeking in his joint decision with a female (independent: $M = 5.03$, $SD = 1.45$; risk seeking: $M = 4.37$, $SD = 1.11$) than a male partner (independent: $M = 4.52$, $SD = 1.39$, $F(1, 630) = 5.67$, $p = .02$; risk seeking: $M = 4.04$, $SD = 1.06$, $F(1, 630) = 3.94$, $p = .05$). There were no differences in the male participants' perceptions of the male decision maker making a joint decision with a male versus female partner on all other potential mediators of recommendation evaluation (all p 's $> .14$).

To understand which of these constructs might be the strongest driver of our effects, we conducted a mediation analysis in the focal subset of our data set (i.e., male participants evaluating a male decision maker who makes a joint decision with a male or female partner). A multiple mediation analysis conducted using bootstrapping (Hayes 2012, model 4) with all evaluation drivers operating as parallel mediators revealed that only the extremity beliefs emerged as a significant full mediator of the effect of partner's gender on male participants' evaluation of the male decision maker (indirect effect = .07, $SE = .05$, 95% confidence

interval [CI], .001–.214; direct effect = .17, SE = .11, $p = .11$). No other evaluation drivers mediated the relationship between the partner's gender and the recommendation evaluation (indecisiveness: 95% CI, $-.012$ to $.141$; lack of courage: 95% CI, $-.020$ to $.112$; lack of strength: 95% CI, $-.046$ to $.074$; independence: 95% CI, $-.011$ to $.081$; interpersonal dominance: 95% CI, $-.012$ to $.087$; accommodating partner's preferences: 95% CI, $-.054$ to $.008$; perceived risk: 95% CI, $-.057$ to $.051$; risk seeking: 95% CI, $-.028$ to $.053$). In sum, these results suggest the male decision maker making a choice with a male versus female partner were driven by their perceptions that the character should have shown more extremity.

Discussion

Study 4 reveals that a male exhibiting a compromise option preference is evaluated more negatively when the joint decision is made with a male (i.e., male-male dyad) than a female partner (i.e., mixed-gender dyad). Further, results also show the specificity of this effect; it does not emerge among women participants or when any member of the decision-making dyad is female. Rather, only male participants believe that males should not recommend compromise options in front of other males.

Results further reveal that the differences in male participants' evaluations of the male character making a joint decision with a male versus female partner are driven primarily by desires for extremity: men believe that in male-male dyads, a more extreme choice recommendation would have been more acceptable. Furthermore, even though male participants believed that the male character should have signaled more strength in the joint decision with a male than a female partner, these beliefs did not emerge as a significant mediator of their evaluations. Similarly, we note that while men perceived greater dominance in the male character's compromise recommendation in the joint decision with a male than female partner, in the present study, this appeared to be satisfied by recommendation of the compromise option. This finding suggests that the drive for interpersonal dominance and status in male-male dyads may be satisfied simply by making a recommendation—but that it is not tied to recommendation of a noncompromise alternative. Finally, the dyadic context does not appear to activate risk attitudes or other normative beliefs (i.e., indecisiveness, lack of courage, independence, and accommodation of partner's preferences) in ways that explain our results.

We note that though the mediator and dependent measure are operationally related in this context (i.e., choice of a compromise option is necessarily less extreme than is choice of an extreme option), the mediator explains only 25% of the variance in the dependent measure, suggesting that the two constructs are to some extent independent.

Furthermore, the relationship between the mediator and the dependent variable appears to be stronger in the focal cell (male participants evaluating male decision makers recommending the compromise option) than in all other cells, meaning that the mechanism of desired choice extremity is particularly cued when males evaluate males' compromise choices. Still, it is necessary for us to provide additional process evidence via moderation, showing that choice of an extreme option can satisfy men's desires to signal masculinity to one another and thus restore the compromise effect.

We do this in study 5. According to our theory, male-male dyads avoid compromise options because of male partners' desire to demonstrate their masculinity to each other through extreme tendencies. If our theory is correct, if we are able to satisfy male partners' desire to extremity signal prior to the focal compromise choices, male-male dyads' tendencies to reject compromise options in their joint decisions should be decreased to a level similar to that observed in female-female dyads.

STUDY 5

Method

Study 5 followed a three-cell design (regular male-male dyads, intervention male-male dyads, and female-female dyads). Participants ($n = 80$; 68% male) were undergraduate students at a private university who completed the study in exchange for course credit.

We used the results from prior studies to calculate the number of dyads needed per condition to detect a rejection of the null hypothesis with 80% power, given our experimental design that included six compromise effect decisions per dyad (details of this calculation are provided in online appendix F). Based on these calculations, before the beginning of this study the lab administrator paired participants randomly to create the three different types of dyads (regular male-male dyads, $n = 14$; intervention male-male dyads, $n = 13$; and female-female dyads, $n = 13$). Partners were seated together in front of one laptop and instructed to work jointly on the study.

All pairs were told that they would imagine making joint purchase decisions in several categories and to treat all decisions as if they were real decisions. The dyads made one choice in each of the following six categories: printers (from Mourali et al. 2007; same as in study 2), toothpaste (from Mourali et al. 2007), flashlights (from Simonson and Sela 2011), tires (from Drolet, Luce, and Simonson 2009), hotels (adapted from Levav, Kivetz, and Cho 2010), and headphones (same as in study 3). All choice stimuli are available in online appendix B.

Before making their compromise choices, the pairs in the intervention male-male conditions were presented with a set of magazines and notified that all available magazines

had been rated on femininity/masculinity by a panel of college students. The magazines ranged from extremely feminine options (i.e., *Cosmopolitan*) to extremely masculine options (i.e., *Muscle and Fitness*) with some neutral options in the middle (i.e., *Psychology Today*); the magazine choice set can be seen in [online appendix G](#). These dyads were asked to select a magazine together and told that they would be entered into a drawing where both member of the winning dyad would receive a one-year subscription for the jointly chosen magazine. After indicating their magazine choice in the survey, the intervention male-male pairs wrote down their choice along with their names on a piece of paper, gave it to the lab administrator for the drawing, and proceeded to the joint compromise effect choices.

In contrast, the regular male-male dyads and female-female dyads responded to the compromise effect choices first and then made the magazine choice. In other words, the partners in the intervention male-male dyads had the opportunity to signal their manhood to each other by making an extremely masculine magazine choice, whereas the regular male-male dyads did not have this opportunity prior to making the compromise effect decisions. A separate pretest demonstrated that the magazines choice task was effective in lowering male participants' desire to demonstrate their masculinity to their male joint decision-making partners (full details about this pretest are available in [online appendix H](#)). At the end of the study all participants provided their demographic information and responded individually to a set of follow-up questions regarding the extent to which each of the six joint choices they made reflected their own or their partner's preferences. The follow-up measures are available in [online appendix I](#) and are not discussed further for the sake of brevity. Full details are available on request from the authors.

Analysis and Results

Similarly to study 3, in this study our data had a hierarchical structure because each dyad made six joint choices in six product categories; consequently, the choices (the level-1 observations) were nested within the dyads (the level-2 observations). Because each of the 40 dyads made six choices, our data set consisted of a total of 240 level-1 observations (84 observations for regular male-male dyads, 78 observations for intervention male-male dyads, and 78 observations for female-female dyads).

We used PROC GLIMMIX in SAS to estimate a two-level logistic regression model using the Maximum Likelihood with Laplace Approximation estimation method (Raudenbush et al. 2001; as used by Murali et al. 2007). As in study 3, PROC GLIMMIX used the default containment method to compute the denominator degrees of freedom. All choice shares are displayed in [table 5](#). In the two-level logistic regression, the dyads' choices (coded

TABLE 5
STUDY 5: CHOICE SHARES

	% Choosing option A	% Choosing option B	% Choosing option C
Regular male-male dyads	26.2%	44%	29.8%
Intervention male-male dyads	9%	61.5%	29.5%
Female-female dyads	10.3%	66.7%	23%

NOTE.—We follow Simonson and Nowlis' recommendation (2000) in reporting the average choice shares across the six product categories (printers, toothpastes, flashlights, tires, hotels, and headphones). Per Simonson and Nowlis (2000), the average choice share of the middle option across the six categories is an indicator of the compromise tendency.

as 1 if the compromise option was selected and 0 otherwise) were predicted by the dyad type at level 2. Results revealed a significant effect of dyad type ($F(2, 200) = 4.31, p = .02$). Planned contrasts showed that the regular male-male dyads were less likely to select the compromise option than female-female dyads ($b = -.94, t(200) = -2.78, p = .006$), replicating our prior findings. Importantly, the intervention male-male dyads were more likely to choose the compromise option than the regular male-male dyads ($b = .72, t(200) = 2.15, p = .03$); there was no difference in the likelihood of choosing the compromise option between the intervention male-male dyads and female-female dyads ($p = .59$). Controlling for product category in the model does not change these results. Furthermore, the cross-level interaction of product category and dyad type was not significant ($p = .70$).

Discussion

Study 5 provided additional evidence of the mechanism underlying the male-male dyads' aversion to compromise options. Results suggest that when two male partners are given the opportunity to explicitly demonstrate their manhood to each other in an unrelated decision prior to the focal compromise effect choices, male-male dyads are as likely to choose the compromise options as female-female dyads; furthermore, they were also more likely to prefer compromise options relative to regular male-male dyads who were not given the opportunity to extremity signal prior to the joint compromise effect decisions. It is interesting to note that a relatively small decision (i.e., the choice of a masculine magazine that appears on the extreme end of the feminine-masculine continuum) appears to satisfy men's desire to act in masculinity-consistent ways and thus leads to the emergence of the compromise effect. One could argue that men's desire to establish their manhood to each other should not end with making a simple masculinity-consistent choice and should persist in the interactions of male-male dyads. However, our pretest results show that men's desire to demonstrate their masculinity is

weakened after the magazine choice; furthermore, it is possible that because of the close proximity in time of the two decisions (the magazines choice and the subsequent compromise effect choices), the male dyads perceived them to be a part of the same decision episode, such that the masculine magazine choice obviated the need to make masculinity-consistent choices subsequently. Therefore, it might be interesting for future research to examine whether men's desire to establish masculinity in front of their decision partner might reemerge if more time lapses between the two decisions or if a more ambiguously masculine choice precedes the focal compromise effect situation.

GENERAL DISCUSSION

Our investigation affirms that the compromise effect is a fairly robust phenomenon. In fact, any dyad that includes a woman exhibits the compromise effect in ways not different from individual decision makers. However, our findings also challenge the universality of this effect: when two men make a decision together, they lean toward more extreme options than do female-female and mixed-gender dyads, as well as individual decision makers. We demonstrate these effects using two different methods of capturing the compromise effect—middle proportions (studies 1, 3, and 5; [Simonson and Nowlis 2000](#)) and relative-share changes between core and extended choice sets (study 2; [Simonson and Tversky 1992](#); [Mourali et al. 2007](#))—both of which are acceptable measures of the compromise effect ([Neumann et al. 2016](#)), as well as using a variety of product categories and both hypothetical and semi-consequential choices.

We also suggest the mechanism underlying the aversion of male-male dyads to the compromise option. We argue that in the presence of other men, men tend to dichotomize, that is, to take actions that are maximally different from feminine norms, which prioritize moderation, and maximally similar to masculine norms, which prioritize extremity. By contrast, consistent with research suggesting that femininity does not lead to dichotomization, we see no similar patterns in female-female dyads. Furthermore, because a female presence makes the masculinity of men in male-female dyads obvious, in these pairings we observe compromise behavior consistent with that of individual decision makers and female-female dyads.

In support of this mechanism, using a projective scenario (as used by [Briley et al. 2000](#)), we show that men evaluate other men more harshly when they recommend a compromise option to a male decision-making partner (male-male dyads) as opposed to a female partner (mixed-gender dyads). Results suggest that these harsh judgments were consistently associated with a sense that men should make decisions that match multiple male-normative tendencies, but only beliefs that men should be more extreme in their

decisions emerged as a reliable mediator. Further evidence for this mechanism is provided in the last study: allowing men to satisfy their dichotomization needs through an alternative signaling choice weakens their tendency to avoid a compromise option on a subsequent task, such that male-male dyads are as likely to choose the middle alternatives as female-female dyads.

Theoretical and Practical Implications

Theoretically, we identify a novel moderator of the compromise effect. The influence of gender on the compromise effect has not previously been identified in individual contexts and had been assumed to be nonexistent in economics work exploring joint decisions ([de Clippel and Eliaz 2012](#)). Thus our basic effect may call for revisions to prior thinking about compromise effects. Further, we note that our data suggest that men's tendency to avoid compromise options in the presence of other men may be due to a need to gender-dichotomize because extreme choices act as a masculinity signal in these contexts. These findings introduce an important idea: as in studies of variety-seeking in groups ([Ariely and Levav 2000](#)), men may have multiple competing goals when making decisions in dyads. Generally, the compromise effect is associated with a "reasonableness" goal—this is certainly one important social goal. However, other types of social goals may exist, depending on the composition of a dyad or group, and these goals warrant further exploration. More broadly, this effect suggests the importance of considering the way that gender role norms may undermine or reinforce established biases. Consequently, a part of our contribution also lies in the potential for our findings to suggest interesting reexaminations of established judgment and decision-making phenomena in socially intensive decision contexts.

Practically, marketers' reliance on the compromise effect to increase sales of most profitable items by adding more expensive options to the choice set may not work as anticipated in a heavily male audience where joint male decisions may be expected. Similarly, the use of "good-better-best" techniques to prompt consumers toward target products might not be effective for products that are likely to be chosen by pairs of male consumers. For example, we may not observe compromise effects among pairs of male college students searching for an apartment, two domestic partners choosing appliances, a father and son choosing a car together, two male friends deciding on wine over dinner, pairs of male investment bankers selecting stocks, or a dyad of male managers that decides on promotion and salary decisions. In such pairs, we may anticipate more all-or-nothing choices when a range of three alternatives is presented.

Furthermore, while the typical use of the compromise effect has to do with driving sales to a high-margin "middle option," in some cases, retailers may want consumers to

choose an extreme option (e.g., the most expensive option). In such cases, male-male dyads may be a desirable decision-making unit: in study 3, for example, male-male dyads tended to choose the more expensive restaurant option compared to the mixed-gender and female-female dyads. To use this insight, marketers may want to prompt men to make decisions with other men. If men make a joint choice on an appetizer or a piece of real estate, for example, they may choose a more expensive alternative than if they choose with women or alone.

Finally, marketers using the compromise effect for new product introduction, positioning, product assortments, and product deletions (Kivetz et al. 2004; Lehmann and Pan 1994; Pan and Lehmann 1993; Simonson and Tversky 1992) need to consider whether the target consumers for their products are likely to purchase them in joint or individual decision-making contexts, as well as the likely gender composition of the decision-making pairs.

Limitations and Future Research Directions

The present work offers fruitful opportunities for future research. For example, we created dyads by pairing individuals who probably had weak ties with each other before participating in the study (i.e., college students taking classes together). It would be interesting to examine whether the male-male dyads' aversion to the compromise option would emerge in the decisions of pairs with strong relationships. On one hand, a strong preexisting relationship might weaken our effect: male partners who know each other may feel a weaker need to establish their masculinity via extreme choices and thus might be more prone to compromise options. On the other hand, because people tend to care more about the opinions of close others (Lerner and Tetlock 1999; Seeley and Gardner 2006; Tetlock and colleagues 1983, 1987), it is possible that the need to demonstrate one's masculinity would be more pronounced in male-male dyads that share a strong relationship. Future work should manipulate this factor to see if more interesting outcomes exist than a simple linear strengthening or attenuation of our focal effect.

In addition, while our findings provide evidence of an interesting and important phenomenon (the attenuation of the compromise effect in male-male dyads) and some preliminary evidence of the dichotomization process, future research may undertake a more comprehensive and conclusive investigation of the underlying mechanism. For example, because the present research does little to elucidate the interpersonal dynamics within each type of dyad, it would be interesting for future research to examine the concrete steps by which dyads reach joint decisions. We also anticipate that there is likely some heterogeneity in the processes by which joint choices are reached based on dyad type. For example, while we did not find that interpersonal domination or cooperation levels explained our effects, we may

have a restricted range on these measures, given our subject population and decision context. Some dyads may experience high levels of conflict that could lead to the abandonment of choice altogether (or choice deferral, as in Dhar 1997) or exit from the joint decision.

Furthermore, we have shown effects consistent with men's desire for dichotomization among men who identify as male in gender. However, gender is recognized to be a continuum, such that some men and women may be idiosyncratically more or less masculine or feminine, regardless of their biological sex (Bem 1974). In addition, there are individuals who are psychologically androgynous, that is, both feminine and masculine according to the situation (Bem 1974). To the extent that some males internalize fewer or weaker gender norms (Wood et al. 1997), these effects may be less likely to emerge. Future research may also seek replication of our findings in populations that either explicitly reject gender norms or cultures where male gender norms differ from those in the United States.

Moreover, in our studies we used choice sets that resembled those used in classic compromise effect research. This approach allowed us to speak to those findings without introducing additional confounds or new factors. However, more complex choice sets with varying patterns of dominance and extremity could be considered. For example, future research could consider whether some products that would be seen as nonnormatively extreme, even for male-male dyads? Furthermore, is there a range of moderate options that would be acceptable to male dyads, and would this range differ from that seen as acceptable to individuals?

Another interesting extension of our work would be to explore whether the proposed mechanism underlying the male-male dyads' aversion to the compromise option would yield similar effects in public but non-dyadic decisions (i.e., decisions in which one person decides instead of two people deciding together but his choice is public to another male individual). Based on our theory, to the extent that men are aware of the presence of other men, simply making decisions in the presence of other men may create similar effects as seen in dyads. That is, a man who is sensitive to the presence of other men in the decision-making or consumption environment may also feel the need to dichotomize, thus tending toward any behavior that is highly typical of male gender norms. Nevertheless, future work should test these predictions.

Finally, we have identified dyadic contexts as a moderator of the compromise effects. There may also be other context effects that change in direction or magnitude in dyads such as, for example, the choice of attribute-balanced options (Chernev 2004, 2005). As another possibility, because making decision in dyads makes differences between people salient, some dyadic decisions may lead to weaker false consensus biases. Because pairs of individuals may show different levels of impulse control in general

(Dzhogleva and Lambertson 2014), dyads may show different levels of reliance on heuristics, in general, and tend toward more analytic thinking. Future research can explore these questions, such that our understanding of basic consumer phenomena can continue to accommodate ever-richer decision-making contexts.

DATA COLLECTION

The data for study 1 were collected from undergraduate students at the University of Pittsburgh in spring 2013. The data for studies 2 and 3 were collected from undergraduate students at the University of Pittsburgh and Boston College in spring 2013 and spring 2015. The data for study 4 were collected on Amazon's Mechanical Turk in fall 2015. The data for study 5 were collected from undergraduate students at Boston College in fall 2015. The data collection in all studies was conducted by research assistants working under the supervision of the two authors. The analyses in all studies were performed by Hristina Nikolova under the supervision of Cait Lambertson.

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