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Consumer lay theory suggests that women will spend more money than men in the presence of a physically dominant male employee, whereas theories of intrasexual competition from evolutionary psychology predict the opposite outcome. A retail field study demonstrates that male customers spend more money and purchase more expensive products than their female counterparts in the presence (vs. absence) of a physically dominant male employee. This effect has a more powerful impact on male customers who lack bodily markers of dominance (shorter stature or measures linked to lower levels of testosterone). When confronted with other physically dominant (vs. nondominant) men, these male customers are particularly prone to signal status through price or logo size. Their elevated feelings of intrasexual (male-to-male) competitiveness drive them to spend more money on status-signaling, but not functional, products and to prefer and draw larger brand logos. Because pictorial exposure is sufficient for the effect to occur, these findings are not limited to in-store interactions with dominant male employees but have broad implications for marketing and advertising.

Keywords: status-signaling consumption, physical dominance, 2D:4D digit ratio, field study, evolutionary psychology

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The Abercrombie & Fitch Effect: The Impact of Physical Dominance on Male Customers' Status-Signaling Consumption

During the last decade, retailers such as Abercrombie & Fitch and Hollister have become known for hiring physically fit, athletic-looking male employees to pose at store entrances shirtless, displaying their "sexy six-packs." However, it is not clear whether this strategy is more effective in enticing male or female customers to make purchases. Many might expect female customers to be influenced more than male customers when encountering a physically imposing male model. To illustrate this point, the Abercrombie & Fitch store on Fifth Avenue in New York City had approximately 90 people standing in line awaiting the store's opening every day, rain or shine, and this had been going on for years (Adler 2012). When asked why customers were willing to wait in line, one woman said, "the guys inside the door" (Gardner 2010). Is this answer representative of a larger sample? To address this possibility, we asked 380 people (46% female) the following question (the text in the brackets represents a different experimental condition):

> Compared to not having anyone at the entrance of a retail store, do you think the presence of an athletic, muscular [nonathletic, nonmuscular] male employee leads male [female] customers to spend less money in the store, more money in the store, or have no effect on spending?

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Results showed a significant employee × customer gender interaction ($F(1, 372) = 8.21$, $p = .004$, $\eta_p^2 = .02$; see Figure 1). In the presence of a nonathletic, nonmuscular male employee, participants did not predict any difference in spending between male customers and female customers ($t < 1$). However, in the presence of an athletic, muscular male employee, participants thought that female customers would spend more money than male customers ($t(185) = 4.15$, $p < .001$; see Table 1 for means).

These results demonstrate that men and women have a lay theory that proposes that the presence of an athletic-looking, muscular male employee should have a more pronounced effect on female customers' purchase behavior, thereby motivating them to spend more money than their male counterparts. Thus, it is possible that marketing managers, such as those at Abercrombie & Fitch and Hollister, place physically fit male employees in their stores under the assumption that doing so will increase female customers' consumption. Yet do these muscular men really increase female customers' spending, and what impact might they have on male customers?

Research has found that men whose bodies show signs of physical dominance (e.g., imposing stature, athleticism, upper-body musculature) are evaluated as higher in status (Jackson and Ervin 1992) and tend to have higher incomes (Judge and Cable 2004). Given that heterosexual women typically prefer men whose physical appearance can be associated with status (Buss 1994), this suggests that the presence of a physically dominant male employee might activate intrasexual (same-sex) competition in male customers (Buunk and Fisher 2009).

Because not all men can compete with a strong physique, an alternative way to signal status is through conspicuous consumption (i.e., the acquisition and display of costly products associated with wealth or status consumed in an attempt to impress others; Veblen 1899). Men buying such products and taking part in other forms of flashy displays often do so to show rivals that they can easily afford significant financial costs, thereby raising others' perceptions of their status (Kenrick 2011). This suggests that a face-to-face encounter with a physically dominant male employee might motivate male customers to purchase more expensive, conspicuous products than their female counterparts.

Research has looked extensively at the impact of attractive women on male customers' purchase behavior. However, less is known about the influence of physically dominant men on other men's behavior. To address this gap in the literature, the current research investigates whether physically dominant men, such as muscular male models featured in advertisements or the athletic employees who work at stores such as Abercrombie & Fitch, can influence male customers' status-signaling consumption. We expect that men who are confronted with another physically dominant man will feel a heightened need to compete and, thus, be more inclined to consume products that signal status through size or price (e.g., products with a large brand logo or a higher price tag). In addition, we predict this effect to exert a more powerful impact on men who cannot compete on the basis of their own level of physical dominance. We refer to this as the "Abercrombie & Fitch effect" because

Figure 1
GRAPHICAL REPRESENTATIONS OF RESULTS (PILOT STUDY AND STUDIES 1, 2A, AND 2B)

Pilot Study: Predicted Spending for Male and Female Customers

Study 1: Total Amount Spent for Male and Female Customers

Study 1: Amount Spent Per Product for Male and Female Customers

Study 2a: Logo Size Preferences for Male and Female Participants

Study 2b: Logo Size Drawings for Short and Tall Males

Study 2b: Logo Size Drawings for Short and Tall Females
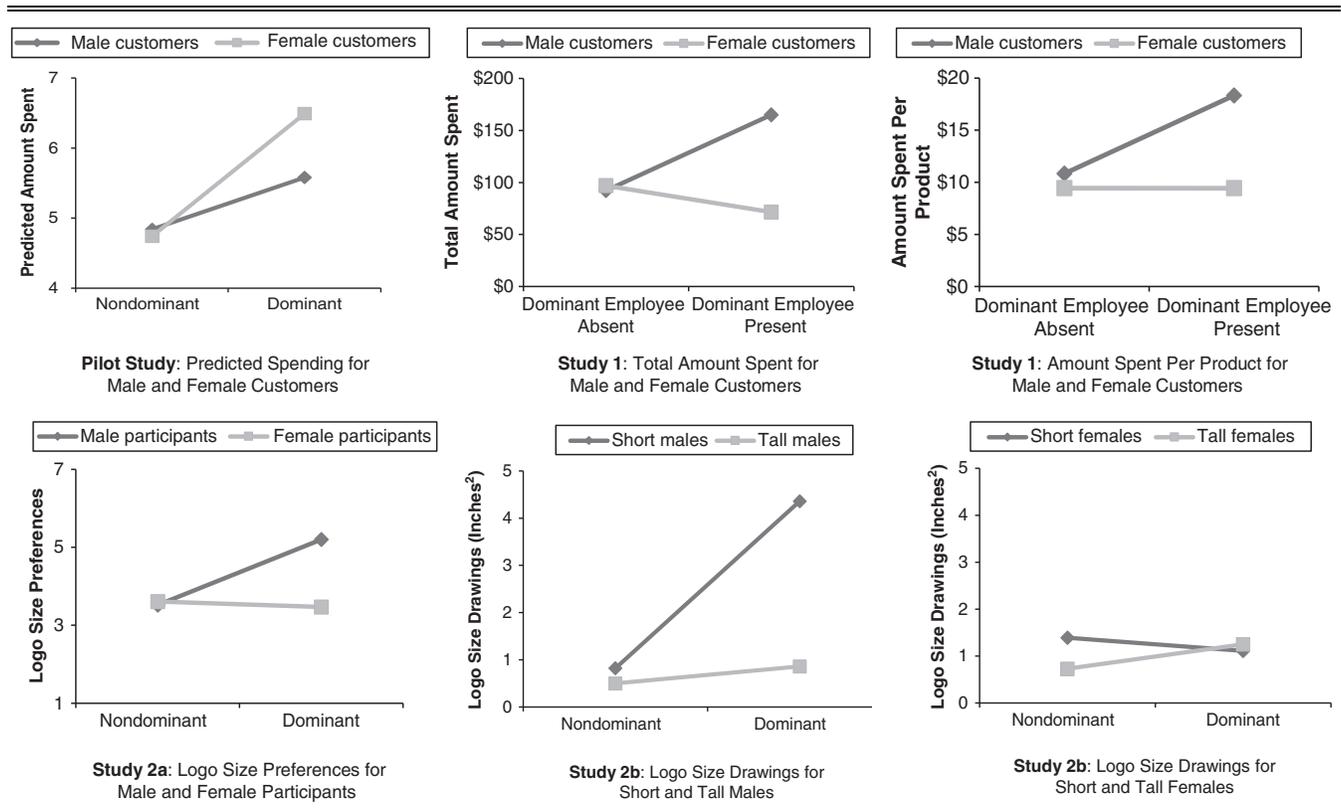
Table 1
STUDY RESULTS

Study	Participants	Independent Variable	Moderators/Mediators	Dependent Variable	Means and CIs	
Pilot study	380 undergraduate students (46% female; M_{age} = 20.63 years)	Dominant employee (dominant, nondominant)	Customer gender (male, female)	Spending***	Nondominant† M_{male}*** = 4.84 M_{female}*** = 4.74	Dominant*** M_{male}*** = 5.58 M_{female}*** = 6.49
Study 1	369 customers (68% female; M_{age} = 49.40 years)	Dominant employee (absence, presence)	Customer gender (male, female)	Total amount spent***	Absent† M_{male}** = \$92.23 M_{female}** = \$96.93	Present*** M_{male}** = \$165.05 M_{female}** = \$71.55
				Average price per item*	Absent† M_{male}** = \$10.83 M_{female}+ = \$9.44	Present*** M_{male}** = \$18.33 M_{female}+ = \$9.43
Study 2a	114 undergraduate students (51% female; M_{age} = 23.45 years)	Dominant employee (dominant, nondominant)	Participant gender (male, female)	Logo size preference***	Nondominant+ M_{male}*** = 3.52 M_{female}+ = 3.61	Dominant*** M_{male}*** = 5.20 M_{female}+ = 3.47
Study 2b	292 undergraduate students (45% female; M_{age} = 21.73 years)	Dominant model (dominant, nondominant)	Participant gender (male, female); participant's own dominance (continuous)	Logo size drawing***	Nondominant $M_{short\ male}$ = .82 $M_{tall\ male}$ = .50 $M_{short\ female}$ = 1.39 $M_{tall\ female}$ = .73	Dominant $M_{short\ male}$ = 4.36 $M_{tall\ male}$ = .86 $M_{short\ female}$ = 1.11 $M_{tall\ female}$ = 1.25
					PROCESS Model 3 95% CI short participants = (2.78, 4.85) 95% CI tall participants = (−1.26, .92)	
			Sense of power (continuous; α = .76); self-esteem (continuous; α = .85)	Sense of power† Self-esteem†		
Study 3	473 undergraduate students (53% female; M_{age} = 20.60 years)	Dominant model (dominant, nondominant)	Participant gender (male, female); participant's own dominance (continuous); intrasexual competitiveness (continuous; α = .85)	Relative preference for status-signaling goods**	PROCESS Model 9 95% CI male high 2D:4D ratio = (.002, .20) 95% CI male low 2D:4D ratio = (−.001, .12)	

*p < .10.
**p < .05.
***p < .01.
†p ≥ .10.
Note: Asterisks at the dependent variable represent significant interaction or model. Other asterisks represent significant pairwise comparisons between rows or columns.

the retailer is widely known for using muscular male models and employees to entice customers at the entrances of their stores and offers large, conspicuous logos as one of its prominent selling points. Although there are a few cases in which women engage in status-signaling consumption (Wang and Griskevicius 2014), such consumption is typically used as a competition tactic to outperform rival women. From these findings and related research showing that women do not compete to the same extent as men by means of displaying status and wealth (Buss 1988; Kenrick and Griskevicius 2013), we do not expect the same effect for female customers.

THEORETICAL FRAMEWORK

Human Mate Preferences

Many studies have reached the conclusion that youth, health, and physical attractiveness are the most desired characteristics for heterosexual men in a female mate; in contrast, status, wealth, and dominance are the top priorities for heterosexual women in their male mate choices. Such gender differences have been documented across a diverse set of human cultures and societies, independent of economic circumstances, political systems, religiosity, and ethnicity (Buss 1989). This also applies for those women who have occupational success, strong financial prospects, high-paying jobs, and large material resources themselves (Buss 1994), thereby excluding the possibility that mate preferences are simply due to an overarching patriarchal societal structure characterized by social and economic gender inequalities (Saad 2004).

Not only do women value status per se, they also prefer men whose physical appearance can be associated with status (Buss 1994). Apart from being evaluated as higher in status, with higher incomes and larger amounts of financial resources, men with bodily markers of physical dominance (e.g., imposing stature, athleticism, and upper-body musculature), on average, have a larger number of sexual partners (Rhodes, Simmons, and Peters 2005) and more reproductive success (Hill et al. 2013) than men with less prominent markers of dominance. Given that masculinity and physical dominance are biological markers of male genetic fitness (Kenrick and Griskevicius 2013), men with athletic bodies were more often selected as mates in ancestral times (Buss 1994). Even today, male physical dominance is sexually attractive to women and intimidating to other men (Frederick and Haselton 2007; Hill et al. 2013; Rhodes et al. 2005).

However, instead of being physically dominant, men can achieve status and obtain access to mates by impressing others through prestige (Henrich and Gil-White 2001). Thus, some men will communicate fitness to potential mates and demonstrate competitiveness to rivals through flashy displays (Kenrick 2011). For example, men are more likely than women to display resources as a tactic to outcompete rival men and gain access to female mates (Buss 1988). Given that two of the most important cues in making inferences about people's status are the cost and noticeability of the products they buy (Belk, Bahn, and Mayer 1982), men are also more prone than women to use conspicuous consumption as a way to signal status (Griskevicius et al. 2007; Sundie et al. 2011). This type of consumption is particularly likely to occur during competition or interaction with rivals and tends to result in a more involved search for products, brands, and events that signal prestige and wealth to others (Kenrick and

Griskevicius 2013). Because only men who have sufficiently large resources can afford to display them in a wasteful, unrestricted manner, such costly signals can only be honestly demonstrated by a small number of people (Miller 2000). Consequently, status-signaling consumption is an effective intrasexual competition tactic in that it relies on signals that might be too "expensive" for rivals to mimic. Although this and other types of male-to-male competition commonly take place in the presence of women, such competitive displays can occur without them. Men sometimes "show off" even when there are no women to impress, simply because they want to consolidate their position in the male dominance hierarchy to earn respect and status from other men (Kenrick 2011). How, then, might the presence of a physically dominant male employee influence male customers' purchase behavior?

Physically Dominant Employees and Consumer Behavior

It has been argued that physically dominant salespeople may be viewed as more respectful, which, in turn, could increase a customers' willingness to buy from these salespeople (Kurz 1969). This claim is particularly relevant given that tall stature or height, which is a bodily marker of physical dominance (Hill et al. 2013) and a heuristic for status (Buunk et al. 2008), has a stronger positive correlation with income in social occupations such as sales and management compared with other, less interaction-oriented occupations (Judge and Cable 2004). In addition, past hiring decisions of male sales associates were heavily determined by the applicants' stature (Otis 1941). Even though these studies have not discussed whether physically dominant employees could influence male and female customers differently, we hypothesize that such employees should have a more pronounced impact on male customers' purchase behavior because their physical appearance is likely to trigger intrasexual competition (Buunk and Fisher 2009). We propose that this heightened drive for same-sex competition transforms the employee into a rival and results in an increased propensity to buy status-signaling products among male customers (Buss 1988; Griskevicius et al. 2012). Our prediction further postulates that less physically dominant men (e.g., men with shorter stature or lower levels of testosterone) will feel an enhanced drive to compete with a physically dominant male employee, and they will do so by purchasing products that demonstrate their financial superiority. Indeed, Adler (1964) postulates that short men are more inclined to engage in compensatory behaviors as way to combat their lack of both stature and status. In other words, because less physically dominant men are unable to compete through their own physiques (Buunk et al. 2008), we propose that these men are more likely to compete by other means, such as status-signaling consumption (i.e., consumption of products that signal status through price or logo size).

OVERVIEW OF STUDIES

In the present research, we examine the impact that physically dominant male employees and models have on customers' purchase behavior and product preferences. First, and in direct contrast to consumer lay theory, our initial retail field study reveals that male customers spend significantly more money and purchase products that are almost twice as expensive as those purchased by female customers in the presence, but not absence, of a physically dominant male employee (Study 1).

Second, we illustrate that this effect is contingent on physical dominance and generalizes beyond just price. Specifically, we demonstrate that the effect also applies to status signaling through logo size (Studies 2a and 2b). In addition, we find that male customers' own level of physical dominance moderates the "Abercrombie & Fitch effect" (Study 2b). Finally, we show that when exposed to a physically dominant male model, men report an increased willingness to spend money on status-signaling, but not functional, products. Generalizing our findings, we demonstrate that this effect is again moderated by participants' own level of physical dominance. More importantly, we provide process evidence for the effect by showing that men's elevated feelings of intrasexual competitiveness act as the underlying psychological mechanism driving our results (Study 3).

STUDY 1: A DOMINANT MALE EMPLOYEE IN A RETAIL FIELD STUDY

The main objective of Study 1 was to investigate how the presence (vs. absence) of a physically dominant male employee would influence customers' actual purchase behavior. Recall that our intuition-based study found that both men and women have a lay theory proposing that the presence of a physically dominant male employee at the store entrance should make women spend more money than men. Contrary to this lay theory, in Study 1 we test our main hypothesis that male customers should spend more money and purchase more expensive products than female customers in the presence, but not absence, of a physically dominant male employee. Because participants in the intuition-based study did not predict any gender differences in the presence of a physically nondominant male employee, our initial field study focused on the presence (vs. absence) of a physically dominant male employee.

Participants, Design, and Procedure

A total of 369 customers (68% female) participated in Study 1, which was conducted as a field study with a large global furniture retailer. Although this particular retail context may not be the typical place in which status-signaling consumption occurs, household furniture has previously been used to measure socioeconomic status (Belk et al. 1982).

The study used a 2 (customer gender: male, female) × 2 (dominant employee[1]: absent, present) quasi-experimental between-subjects design. Customers in the employee-present condition entered through the store's main entrance, where a physically dominant male employee greeted them. Those customers in the employee-absent condition entered the store but were not greeted by an employee. Data collection took place during a weekend, with the order of conditions counterbalanced using an ABBA design, in which the employee-absent condition preceded the employee-present condition on Saturday and with the order reversed on Sunday. Regardless of their assigned condition, all customers completed their normal shopping, and they were not informed that a study was taking place.

After making their purchases and exiting the cash register area, research assistants approached customers and asked if they would be willing to participate in a research study. Customers who indicated their agreement completed a questionnaire that included demographic information and total amount spent in the store. As part of our cover story and to ensure that customers in the employee-present condition noticed the physically dominant male employee, customers were asked whether an employee greeted them upon entry, and if so, what they thought of this employee, in terms of his friendliness (1 = "unfriendly," and 7 = "friendly"). Only nine customers in this condition left this item unanswered, and excluding them from the analyses did not change the nature and significance of our results.

After receiving permission, the research assistants took photographs of customers' receipts to count and record the number of items purchased and to verify the total amount spent. As a proxy for status-signaling consumption, the amount-spent measure was divided by the number of items purchased (thus representing a measure of the average price paid per item), because status products, on average, tend to be more expensive than products that are less linked to status (Griskevicius et al. 2007).

Results and Discussion

We conducted a 2 (customer gender: male, female) × 2 (dominant employee: absent, present) between-subjects analysis of variance (ANOVA) on the total amount of money spent in the store to examine our hypothesis that men would spend more money than women in the presence, but not absence, of the physically dominant male employee. In support of this notion, the interaction effect was significant ($F(1, 363) = 13.36$, $p < .001$, $\eta_p^2 = .04$). In the presence of the physically dominant male employee, male customers spent approximately 131% more money (M = $165.05) than female customers (M = $71.55; $t(183) = 4.80$, $p < .001$). In the employee-absent condition, the amount of money spent did not differ between male (M = $92.23) and female (M = $96.93; $t < 1$, see Figure 1) customers. The main effect of customer gender was significant ($F(1, 363) = 10.92$, $p = .001$, $\eta_p^2 = .03$), and the main effect of the dominant employee condition was marginally significant ($F(1, 363) = 3.12$, $p = .078$, $\eta_p^2 = .01$; for a summary of all results, see Table 1).

Next, we tested whether customer gender and the presence (absence) of the dominant male employee would interact to influence the purchase of more expensive products (average price per item) as a proxy for status-signaling consumption. We found a marginally significant interaction, which is central to our investigation ($F(1, 341) = 3.67$, $p = .056$, $\eta_p^2 = .01$). In the presence of the physically dominant male employee, the average price per item purchased by male customers (M = $18.33) was approximately 94% more expensive than the average price per item purchased by female customers (M = $9.43; $t(172) = 2.61$, $p = .010$). When the physically dominant male employee was absent, we found no difference on the amount spent per item between male (M = $10.83) and female (M = $9.44; $t < 1$) customers. Presented another way, the amount spent per item did not differ for female customers in the presence (M = $9.43) versus absence (M = $9.44; $t < 1$) of the physically dominant male employee. However, male customers spent significantly more per item when the physically dominant male employee was present (M = $18.33) rather than absent (M = $10.83; $t(110) = 2.00$, $p = .048$; see Figure 1). The main effect of customer gender was significant ($F(1, 341) = 6.88$, $p = .009$,

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[1]The confederate and the stimuli for all studies were pretested for dominance and attractiveness to ensure that our manipulations were successful. For all pretest results, see Table 2; for scales, scale references, and stimuli, see the Web Appendix.

Table 2
PRETEST STUDY RESULTS

Study	Participants	IV	DV	Means	
Study 1	37 undergraduate students (62% female; M_{age} = 20.43 years)		Physical dominance**	Scale Midpoint 4.50	Dominant 7.34
			Attractiveness†	Scale Midpoint 4.50	Dominant 5.48
Study 2a	46 online consumer panel participants (48% female; M_{age} = 33.26 years)	Male employee (dominant, nondominant)	Physical dominance**	Nondominant 3.55	Dominant 7.90
			Attractiveness†	Nondominant 5.13	Dominant 5.85
Study 2b	68 undergraduate students (60% female; M_{age} = 22.68 years)	Male model (dominant, nondominant)	Physical dominance*	Nondominant 6.66	Dominant 7.32
			Attractiveness†	Nondominant 6.21	Dominant 6.61

*$p < .05$.
**$p < .01$.
†$p \geq .10$.

η_p^2 = .02), and the main effect of the dominant employee condition was marginally significant ($F(1, 341)$ = 3.64, p = .057, η_p^2 = .01).

We then conducted a two-way ANOVA in which we examined the impact of customer gender and the presence (absence) of the dominant employee on the number of items purchased. According to our theorizing, men confronted with a physically dominant male employee will attempt to compete with this rival through spending in general, and by purchasing products that are more expensive in particular. However, we do not expect that male customers will purchase more products, because there is no obvious link between the number of products purchased and status-signaling consumption. Indeed, no interaction emerged ($F < 1$), and the main effect of customer gender was not significant ($F < 1$), nor was the main effect of the dominant employee condition ($F(1, 344)$ = 2.21, p = .14).

Taken together, the results of Study 1 show that the presence (vs. absence) of a physically dominant male employee more than doubled male customers' spending and also motivated male customers to purchase products that were almost twice as expensive as those purchased by female customers. Importantly, we found that men did not purchase a larger number of products than female customers in the presence of the physically dominant male employee, but, rather, they purchased *more expensive* products. These results are promising; however, given that we conducted Study 1 in a live retail setting, we could not fully control everything that may potentially have influenced these results, so the study has several limitations. First, given the quasi-experimental design wherein customers were assigned to conditions as they naturally entered the store, our field study does not provide true random assignment. Second, we did not control for whether each customer was shopping alone, together with a partner, or with another group of people (e.g., friends, family). Third, although the design of our field study is similar to others, one might speculate that the effects demonstrated were a result of customers' exposure to a stimulus versus no-stimulus design, given that we only manipulated whether the physically dominant male employee was present or absent at the store entrance. Thus, we cannot explicitly conclude that the employee's physical dominance, and not his mere presence, is driving our effect. Finally, we have yet to test for our proposed moderating variables and the underlying mechanism. Thus, to provide more substantive evidence of the "Abercrombie & Fitch effect," we remedy each of these shortcomings in our subsequent studies.

STUDY 2: STATUS SIGNALING THROUGH LOGO SIZE

Studies 2a and 2b aimed to generalize the results with additional dependent variables while also testing our proposed moderator of men's own level of physical dominance as measured by stature (Study 2b). Instead of measuring overall spending and purchasing of more expensive products, we measured whether men would prefer products with larger brand logos after exposure to other physically dominant men. Prior research has demonstrated that status is communicated not only through the price of the products being purchased but also through product and logo size (e.g., Dubois, Rucker, and Galinsky 2012; Rucker and Galinsky 2009). To address the limitations of our initial field study, the studies that follow consistently used photographs of two men evaluated as equal in attractiveness but different in physical dominance (for stimuli, see the Web Appendix). This enabled us to examine our main hypothesis that men's status-signaling consumption would only occur after exposure to another physically dominant man.

STUDY 2A: LOGO SIZE PREFERENCES

Recall that Study 1 found that men purchased more expensive products than women did in the presence, but not absence, of a physically dominant male employee. In Study 2a, we predicted that this effect would also occur when status-signaling consumption is measured through logo size rather than price. Thus, we examined whether male participants would prefer larger logos after exposure to a physically dominant (vs. nondominant) male employee. We did not predict a similar effect in female participants.

Participants, Design, and Procedure

The study used a 2 (participant gender: male, female) × 2 (dominance condition: dominant, nondominant) between-subjects design. A total of 114 undergraduate students (51% female) were given a questionnaire and a photograph depicting either the physically dominant or the physically nondominant

male employee from our pretest. Participants were informed that researchers were interested in their ability to form accurate impressions of the person pictured when they had very limited information and rated the employee pictured on several measures consistent with the cover story. Specifically, participants completed a five-item social attraction scale (McCroskey and McCain 1974; α = .69). Participants' ratings of the cover story items did not differ between conditions in either the present study or subsequent studies.

Next, framed as another part of the survey, participants were asked to imagine that they were shopping for a piece of clothing. In particular, they were instructed to indicate what they preferred in terms of the visibility of the brand's logo on the piece of clothing they were buying using four items from Rucker and Galinsky (2009). Items were averaged to form an index of logo size preferences (α = .88; nonvisible–visible, small–big, unnoticeable–noticeable, inconspicuous–conspicuous).

Results and Discussion

A 2 (participant gender: male, female) × 2 (dominance condition: dominant, nondominant) ANOVA revealed the hypothesized interaction ($F(1, 110) = 8.28$, $p = .005$, $\eta_p^2 = .07$). Male participants in the dominant condition (M = 5.20) preferred significantly larger logos than male participants in the nondominant condition (M = 3.52; $t(54) = 3.57$, $p < .001$), whereas female participants' logo size preferences did not differ between the dominant (M = 3.47) and nondominant (M = 3.61; $t < 1$; see Figure 1) conditions. The main effect of participant gender was significant ($F(1, 110) = 6.67$, $p = .011$, $\eta_p^2 = .06$), as was the main effect of dominance ($F(1, 110) = 5.84$, $p = .017$, $\eta_p^2 = .05$).

These findings demonstrate that exposure to a physically dominant (vs. nondominant) male employee results in a more pronounced preference for larger logos in male participants, whereas type of exposure does not influence female participants' logo size preferences. Thus, our "Abercrombie & Fitch effect" generalizes beyond just price and also applies when status-signaling is measured through logo size.

STUDY 2B: LOGO SIZE DRAWINGS AND CUSTOMER DOMINANCE MODERATION

In Study 2b, we aimed to generalize the implications of our research findings. Although Study 2a never explicitly referred to the men pictured as store employees, they wore store uniforms and were photographed in a retail setting. According to our theorizing, however, the "Abercrombie & Fitch effect" should not be restricted to exposure to dominant male employees but should also apply after exposure to dominant, nonuniformed men (such as physically dominant male models used to promote products or brands). In Study 2b, we hoped to show that even exposure to a dominant, nonuniformed male model would be sufficient for the effect to occur. This would broaden our implications beyond the effects previously reported and would imply that advertising, commercials, or in-store displays featuring physically dominant male models could also influence male customers' status-signaling consumption. Moreover, unlike Study 2a, which used photographs of different men as experimental stimuli, this study featured the same male model in both conditions, but with his dominance differing between conditions. Prior to the study, a professional graphic designer manipulated the model's physical dominance

(by broadening his upper body musculature and thighs as well as increasing his stature; for stimuli, see the Web Appendix).

Whereas Study 2a focused on participants' logo size preferences, Study 2b used a related behavioral dependent variable to indicate logo size preferences (i.e., logo size drawings). This enabled us to test our prediction that men not just prefer larger logos but also draw larger logos for themselves after exposure to a physically dominant male model. Finally, we examined the validity of our proposed moderator, participants' own level of physical dominance (measured via stature). Specifically, we investigated whether short (vs. tall) men would draw significantly larger logos after exposure to a physically dominant (vs. non-dominant) male model. We did not expect that physical dominance or stature should influence women's logo size drawings.

Participants, Design, and Procedure

The study used a 2 (participant gender: male, female) × 2 (dominance condition: dominant, nondominant) × (participant dominance: continuous) between-subjects design. A total of 292 undergraduates (45% female) were randomly assigned to one of the dominance conditions, then received a photo of either the physically dominant or the nondominant male model. Participants were told to examine the male model pictured and reply to several statements consistent with the cover story used in Study 2a (social attraction scale α = .63). Participants also rated the individual's competency (1 = "not knowledgeable," and 9 = "knowledgeable").

Framed as another part of the study, participants were asked to imagine that they were buying a piece of clothing. They were presented with an image of a blank T-shirt and were instructed to draw the university's logo on the shirt in a size they would prefer if they were to buy the shirt for themselves. Six research assistants, blind to the study objective, each measured a subset of the logo drawings using a ruler and noted the height and width of the logos. Measurements were entered into a spreadsheet with the subject's participant number to pair their drawing with their survey responses. Then, lab assistants multiplied these measures in the spreadsheet to calculate their size (in square inches), which served as our behavioral dependent variable (Wang and Griskevicius 2014).

Finally, participants responded to questions regarding demographic information, including their own stature in inches, which we used as a proxy for participants' own level of physical dominance. To exclude the possibility that our results would merely be an effect of perceived power, with men feeling more powerless after exposure to the physically dominant male model, participants also completed the eight-item generalized sense of power scale (α = .76; Anderson and Galinsky 2006). This was deemed important because previous research has shown that people who feel powerless rather than powerful are more inclined to prefer larger logos (Rucker and Galinsky 2009). In addition, because related research has found that people with low (vs. high) self-esteem are more inclined to consume high-status products (Sivanathan and Pettit 2010), we wanted to ascertain that our results would not be affected by participants' self-esteem. Thus, participants completed the ten-item Rosenberg (1965) self-esteem scale (α = .85).

Results and Discussion

To examine our main prediction that male participants' own physical dominance would impact logo size drawings when
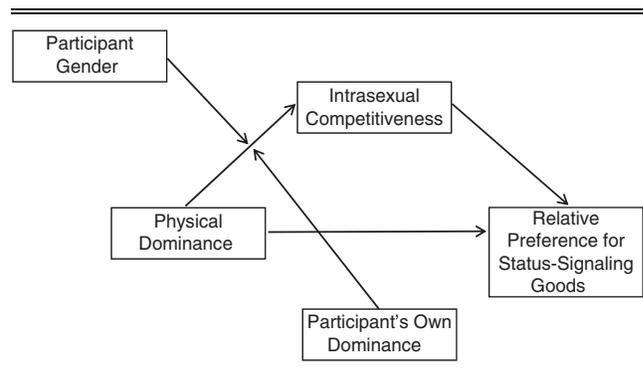
exposed to the physically dominant male model, we conducted a multiplicative moderation analysis (PROCESS Model 3) following the procedures recommended by Hayes (2013). Dominance condition (nondominant, dominant) was the predictor, participant gender (female, male) was the first moderator, participants' own level of physical dominance (measured via our continuous stature variable) was the additional moderator, and our logo size drawings measure was the outcome variable. Our hypothesized three-way interaction was statistically significant (b = −.48, t = −5.23, p < .001). Thus, we examined the conditional effect of the participant gender × dominance interaction on logo size drawings at one standard deviation below and above the mean of participants' own level of physical dominance (i.e., for short and tall individuals, respectively) using a bootstrapping procedure that generated a sample size of 5,000. The results of a 95% confidence interval (CI) revealed that the conditional effect for short participants was significantly different from zero (CI = [2.78, 4.85]). However, we obtained no such effect for tall participants (CI = [−1.26, .92]). As Figure 1 shows, short (vs. tall) men drew substantially larger logos after exposure to the physically dominant male model (M_{short} = 4.36 square inches, M_{tall} = .86 square inches), but not after exposure to the nondominant male model (M_{short} = .82 square inches, M_{tall} = .50 square inches). In contrast, logo size drawings made by short and tall women did not differ materially in the dominant (M_{short} = 1.11 square inches, M_{tall} = 1.25 square inches) or nondominant (M_{short} = 1.39 square inches, M_{tall} = .73 square inches) condition. In addition, and in replication of Study 2a, the participant gender × dominance interaction was significant (b = 1.83, t = 4.76, p < .001), as were the direct effects of dominance (b = 1.12, t = 5.89, p < .001) and participant gender (b = .51, t = 2.69, p = .008).

Including participants' sense of power (p = .92) or self-esteem (p = .83) as a covariate did not influence the significance of our findings. Moreover, replacing our stature measure with either self-esteem or generalized sense of power in our multiplicative moderation analysis consistently produced nonsignificant three-way interactions (p_{power} = .62; $p_{self-esteem}$ = .36). Finally, treating participants' sense of power or self-esteem as mediators yielded null findings, thus making any of these alternative accounts unlikely as the main driver motivating our findings. Taken together, independent of whether the dominant man was depicted as a store employee (Study 2a) or a nonuniformed male model (Study 2b), men, but not women, preferred and drew significantly larger logos after exposure to a physically dominant (vs. nondominant) man, especially if they were shorter than average in stature.

STUDY 3: STATUS SIGNALING THROUGH PRICE AND INTRASEXUAL COMPETITION MEDIATION

The primary purpose of Study 3 was to provide evidence for the role of intrasexual competition as the underlying psychological mechanism driving the impact of physical dominance on male customers' status-signaling consumption while simultaneously replicating the moderating influence of participants' own physical dominance obtained in Study 2b (see Figure 2 for the conceptual model). Even though male customers in our initial field study purchased significantly more expensive products in the presence of the physically dominant male employee, it is unclear whether these products were objectively rated as higher in status. In Study 3, we therefore

Figure 2
CONCEPTUAL MODERATED MEDIATION MODEL (STUDY 3)

examine whether physical dominance influences male customers' product type consumption, such that men exposed to a physically dominant male model will become more motivated to consume status-signaling, but not functional, products. Furthermore, given Study 2b's findings that exposure to a physically dominant male model primarily increased status-signaling consumption among men whose own bodies lacked a marker of dominance (i.e., men with shorter stature), we aimed to generalize this effect by investigating whether another bodily marker of dominance could produce similar results. Specifically, we measured the length of participants' second digit (index finger) and fourth digit (ring finger) to compute their 2D:4D ratio, which is a negative correlate for people's prenatal and adult testosterone levels (Manning and Taylor 2001). Male 2D:4D ratios are negatively related to dominance, stature, and masculinity but not physical attractiveness, which indicates that lower digit ratios primarily reflect men's status and dominance (Neave et al. 2003). In other words, the smaller the digit ratio for a man, the more testosterone he is likely to have and thus the more likely he is to be tall, athletic, and physically dominant. To be clear, our focus is on men with higher 2D:4D ratios (lower levels of testosterone), because we predict that these less physically dominant men will be more susceptible to the "Abercrombie & Fitch effect."

Given that men tend to use consumption to outcompete same-sex rivals (e.g., Buss 1988; Griskevicius et al. 2012), we predicted that exposure to a physically dominant (vs. nondominant) male model should make men with higher digit ratios (less testosterone) more competitive and, consequently, willing to spend more money on status-signaling rather than functional products. Therefore, to test our proposed process of intrasexual competition, we measured whether exposure to a dominant versus nondominant male model would influence participants' feelings of competitiveness toward other same-sex people and whether such feelings could explain why men with higher (vs. lower) digit ratios would be particularly prone to engage in status-signaling consumption under such circumstances. We did not predict that digit ratio or intrasexual competition should influence women's status-signaling consumption.

Participants, Design, and Procedure

The study used a 2 (participant gender: male, female) × 2 (dominance condition: dominant, nondominant) × (participant

dominance: continuous) between-subjects design. A total of 473 undergraduate students (53% female) were randomly assigned to one of the dominance conditions, then received a photo of either a physically dominant or a nondominant male model (same stimuli as in Study 2b). A manipulation check ensured that the dominant male model (M = 5.97) was perceived as significantly more physically dominant than the nondominant male model (M = 4.47; F(1, 471) = 284.47, $p < .001$, $\eta^2 = .38$).

Participants then completed items from a seemingly unrelated study on consumption preferences (Griskevicius et al. 2007). Specifically, they were asked the following: "Compared with the average student at your university, please indicate how much money you would want to spend on...," and then indicated their willingness to spend money on a set of status-signaling and functional items (1 = "much less than the average student," and 9 = "much more than the average student"). The status-signaling items included a new cell phone, a new car, a vacation to Europe, a restaurant for a date or special event, sunglasses, jewelry or a watch, and dress shoes. The functional items included gasoline, a road trip, everyday dining, snacks, Netflix or a similar service, fast food, and household goods such as batteries and light bulbs. Items were adapted from previous research (Griskevicius et al. 2007; Sundie et al. 2011; Wang and Griskevicius 2014). The status-signaling products were averaged to compute an index of status-signaling consumption ($\alpha = .80$), whereas the functional products were averaged to calculate an index of functional consumption ($\alpha = .62$). The latter alpha value, while low, is equal to similar indices of functional consumption used in previous related research (Wang and Griskevicius 2014). In addition, participants replied to seven items from Buunk and Fisher's (2009) intrasexual competition scale ($\alpha = .85$).

Finally, participants provided demographic information, including their age and gender. We then utilized the same procedure as Bailey and Hurd (2005) to measure the length of participants' second and fourth fingers on their right hands, which enabled us to compute their 2D:4D ratios. Specifically, lab assistants who were blind to our hypotheses asked to scan participants' right hands using a document scanner. To increase the accuracy of measurement, lab assistants drew small marks on the basal creases of the index and ring fingers of participants' right hands before they were scanned (Bailey and Hurd 2005). The scans were saved on a computer and a different research assistant measured participants' index (2D) and ring (4D) fingers from the hand scan images using the GNU Image Manipulation Program (GIMP). The length of each digit in units of pixels, from the middle of the basal crease to the tip of the finger, was determined using the GIMP "measure" tool. Ratios were calculated by dividing the length, in pixels, of the second digit (index finger) by the length, in pixels, of the fourth digit (ring finger). In line with previous research (e.g., Bailey and Hurd 2005) digit ratios were lower for men (M = .95) than for women (M = .97; F(1, 471) = 28.32, $p < .001$, $\eta^2 = .06$).

Results and Discussion

The main prediction of Study 3 was that exposure to a physically dominant male model should make men more competitive toward other men and, in turn, more willing to spend money on status-signaling relative to functional products, assuming they have higher (vs. lower) digit ratios. We

tested this prediction using a moderated mediation analysis (PROCESS Model 9) following the procedures recommended by Hayes (2013). Dominance condition (nondominant, dominant) was the predictor, participant gender (female, male) was the first moderator, and participants' own level of physical dominance (measured via the 2D:4D ratio) was the additional moderator. Furthermore, intrasexual competitiveness was the mediator, and a difference score between participants' willingness to spend money on status-signaling and functional products was the outcome variable.[2] We found that the direct effect of dominance condition on intrasexual competitiveness was significant (b = .31, t = 2.98, p = .003), as was the direct effect of participant gender (b = .35, t = 3.23, p = .001) and 2D:4D digit ratio (b = 3.79, t = 2.38, p = .018). Thus, participants expressed more intrasexual competitiveness when exposed to the physically dominant male model. Furthermore, men felt more competitive than women, and participants with higher 2D:4D ratios (i.e., lower levels of testosterone) felt more competitive than participants with lower 2D:4D ratios (i.e., higher levels of testosterone). Importantly, the participant gender × dominance interaction was statistically significant (b = .43, t = 1.97, p = .049), indicating that men reacted with stronger feelings of intrasexual competitiveness than women after exposure to the dominant male model, but not after exposure to the nondominant male model. In addition, the effect that intrasexual competitiveness had on participants' willingness to spend money was marginally significant (b = .10, t = 1.74, p = .083), with participants being slightly more motivated to consume status-signaling relative to functional products if they felt more rather than less competitive. Central to our theorizing, a bootstrapping procedure that generated a sample size of 20,000 revealed that this effect was indirect through the two moderators. Intrasexual competitiveness never mediated the effect of dominance on women's willingness to spend money, regardless of whether their digit ratio was low or high (i.e., 1 SD below or above the mean), as evident from the 95% confidence intervals that consistently contained zero. Conversely, and as predicted, intrasexual competitiveness significantly mediated the effect of dominance on men's willingness to spend money and thus motivated them to spend more money on status-signaling relative to functional products, but only among men with a high (CI = [.002, .20]) and not low (CI = [−.001, .12]) digit ratio. Thus, similar to Study 2b, only those men who lacked physical dominance of their own showed an increased willingness to consume status-signaling goods after exposure to a physically dominant male model, and their elevated feelings of intrasexual competitiveness drove this effect.

GENERAL DISCUSSION

This is one of the first articles to show the financial consequences of a physically dominant male employee on male

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[2] A three-way mixed ANOVA, with dominance (dominant, nondominant) and participant gender (male, female) as between-subjects factors and product type (status products, functional products) as the within-subject factor, found the hypothesized three-way interaction (F(1, 469) = 4.99, p = .026, $\eta_p^2 = .01$). Exposure to the physically dominant (vs. nondominant) male model made men, but not women, more willing to spend money on status products, whereas type of exposure did not influence willingness to spend money on functional products for either men or women. Thus, product type moderated the effect of physical dominance on men's consumption, but had no impact on women.

customers' purchase behavior and the impact that physically dominant male models have on other men's status-signaling consumption. Contrary to consumer lay theory, we find that physically dominant male employees and models motivate male customers to spend more money and buy more expensive products than female customers. In addition, we demonstrate that physical dominance influences product type consumption, which generalizes to products that signal status through price or logo size but does not apply to more functional products. We also show that the "Abercrombie & Fitch effect" occurs only after exposure to physically dominant (vs. equally attractive, nondominant) employees and models. Finally, we show that male customers who lack bodily markers of dominance are particularly prone to engage in status-signaling consumption due to increased feelings of intrasexual competitiveness when facing other dominant men.

We conducted a meta-analysis to investigate the impact of male participants' status-signaling consumption across all studies that included the dominant and nondominant conditions (Studies 2a, 2b, and 3; N = 438 men) using the Stouffer method (Rosenthal 1995). This analysis produced a statistically significant effect (z = 4.98, $p < .001$), in support of our argument that men respond with increased status-signaling consumption after exposure to physically dominant male employees and models.

Theoretical Implications

Contributing to the growing stream of evolutionary-based consumer research, the main theoretical contribution of this work is the finding that physically dominant men have significant consequences on male customers' purchase behavior and product preferences. Whereas previous research has typically focused on the effect of physically attractive women on men's status-signaling consumption, the present research instead highlights the impact of physically dominant men on male customers' consumption patterns. Our moderating factors reflecting participants' own physical dominance also extend recent marketing research (e.g., Durante et al. 2014) investigating the impact of physiological factors on customers' product choices and financial decisions. At a general level, our results relate to literature demonstrating that customers whose self-views have been challenged are more motivated to consume self-view-bolstering products (e.g., Gao, Wheeler, and Shiv 2009; Rucker and Galinsky 2009) because of their reparative effects on the ego (Sivanathan and Pettit 2010).

Managerial Implications

Our results add to research on "aesthetic labor" by demonstrating that male employees' physical dominance can increase consumer spending and sales of status-signaling products, particularly if target customers are men and less physically dominant themselves. However, it should be noted that the main effect of physical dominance in both our field and lab-based studies was typically positive, indicating a general increase in status-signaling consumption as a function of male physical dominance.

While Abercrombie & Fitch is a salient example, we suggest that other more sales-driven firms could benefit from our findings by assigning tall, athletic male sales associates to manage the accounts of shorter male customers for prestigious goods such as luxury cars, exclusive watches, and jewelry. In addition, our general findings suggest that flashy designer brands such as Burberry, Gucci, and Armani could benefit from staffing their menswear departments with physically dominant male employees. This hiring strategy could represent a dramatic departure for some firms, as many have typically hired attractive female sales associates to target male customers in the past.

Ultimately, it is important to note that our effect should extend beyond the mere presence of physically dominant male employees in retail stores. Because all our lab-based studies manipulated physical dominance through pictorial exposure, this suggests that ads, commercials, or in-store displays featuring physically dominant spokesmen, such as professional athletes or male fitness models, could also increase male customers' motivation to consume status-signaling products. The results of Studies 2b and 3 support this assertion because exposure to a physically dominant male model who was not wearing any type of store uniform and was not photographed in a store environment was sufficient for the effect to occur. Thus, because the effect is not limited to face-to-face interactions with dominant male employees, our findings should have broad and important implications for marketing and advertising.

Future Research

Our research provides convincing evidence that male physical dominance influences male customers' status-signaling consumption. However, are there any occasions when female customers are affected by such male-displayed dominance? While men typically communicate their mate value through status and wealth, women are more likely to engage in acts that enhance their beauty and health (e.g., Buss 1988, 1989). Therefore, a suggestion for future research is to examine whether physically dominant men can make women more willing to consume beauty-boosting products and items associated with health rather than wealth. Relatedly, because studies show that women sometimes use conspicuous consumption as a mate-guarding tactic against other female rivals (Wang and Griskevicius 2014), future research could investigate whether women would be more willing to buy luxurious goods in the presence of an appearance-threatening female employee.

It is already established that exposure to physically attractive women increases men's willingness to spend money on status products (Griskevicius et al. 2007; Sundie et al. 2011). Nevertheless, a fruitful question for future research is which type of individual has the most pronounced impact on men's status-signaling consumption—a physically attractive woman or a physically dominant man (i.e., intersexual attraction vs. intrasexual competition).

A final avenue for future research would be to test whether our documented effect depends on whether participants have a collective rather than a competitive mindset. Thus, scholars can examine the consequences of challenging (vs. affirming) male customers' status prior to exposing them to other physically dominant (vs. nondominant) men. If our theorizing holds, such a manipulation should moderate the effect and influence only those men whose status has been challenged rather than affirmed. Although further studies are needed to gain a deeper understanding of the "Abercrombie & Fitch effect," this research takes an important first step in uncovering the impact of men's physical dominance on other men's purchase behavior.

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