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Affect-based nonconscious signaling: When do consumers prefer negative branding?

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Abstract

When do consumers prefer negative branding, and why? One pilot study and four experiments, including an Implicit Association Test measuring nonconscious associations between negative words and dominance, converge on the conclusion that male consumers induced into same-sex competition send energy-efficient dominance signals to elicit fear and avoidance from competitors and maintain access over territory or resources. As a result of this competitive state, male consumers show a preference for negatively valenced words that can signal threat to rivals and elicit behavioral avoidance ("negative branding"). The preference for negative branding disappears under four conditions: (a) When dominance signaling is not needed because rivals are not physically dominant (smaller and weaker), (b) When visual associations show that the negative brand is no longer a dominance signal, (c) When male consumers are induced to think about masculinity but not dominance, or (d) When the male consumer has a low individual difference desire for intrasexual competition. Together, our findings contribute to the marketing literature by introducing a novel type of signaling ("dominance signaling") that is distinct from prestige signaling and the conspicuous consumption of luxury goods. Dominance signaling and its influence on consumer product branding ("dominance goods"), as well as implications for evaluative conditioning, are discussed.

KEYWORDS

affect, consumer motivation, emotion valence, evolutionary psychology, explicit and implicit attitudes, IAT

1 | INTRODUCTION

Marketers often pair their product or brand logo with positive stimuli to elicit positive emotional responses from consumers, a process called evaluative conditioning (Gorn, 1982; Stuart, Shimp, & Engle, 1987; Stuart, Shimp, & Engle, 1990; Sweldens, Van Osselaer, & Janiszewski, 2010). In this process, brands paired with positively valenced words from the Affective Norms for English Words (ANEW; Bradley & Lang, 1999) or with positively valenced visual images from the International Affective Picture System (Lang, Bradley, & Cuthbert, 2008) are found to elicit positive emotions, hence approach and purchase intentions from consumers (Sweldens et al., 2010). Similarly, brands paired with negatively valenced words or images are found to elicit negative emotions, hence avoidance and nonpurchase from consumers (Stuart et al., 1990). Given these self-evident assumptions, and if using negatively valenced words is ostensibly not a good strategy because they unconsciously activate a "repulsion" reaction from consumers, why do many successful brands in the marketplace employ negatively valenced branding (e.g., *Affliction* clothing, *Fat Bastard* wine, Urban *Decay* cosmetics, *Garbage*, and *Poison* perfume)? Here, "valenced" branding refers to the use of positive versus negative words or images to "brand" or represent products and elicit pleasant versus unpleasant emotions, hence approach versus avoidance from consumers, respectively (Frijda, 1986; Guest, Estes, Gibbert, & Mazursky, 2016; Manolică, Mititiuc, & Roman, 2018).

In the present research, we seek to examine conditions under which consumers would prefer negative over positive branding as well as to identify a mechanism underlying this preference. We draw on literature in anthropology where animals and humans engage in dominance contests (and signaling) to attain a higher social ranking over rivals (Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013), as well as literature based in evolutionary psychology where males (but not females) competing with same-sex rivals engage in direct aggression behaviors (Griskevicius et al., 2009). Building on these literatures, we propose that intrasexual competition (IC) between males (but not females) elicit the need for "energy efficient" dominance signals (signals that do not require constant exertion of effort, such as roaring or beating one's chest), and hence a preference for negative branding that suggests one should be feared because they are capable of inflicting harm (hereafter, *negative branding*). Thus, by showing when and how consumers prefer negative branding, the present research contributes to the literature on evolutionary psychology by providing evidence that brands are the energy efficient, modern equivalent of evolutionary means of signaling dominance (roaring loudly, beating one's chest, thumping forcefully; van Lawick-Goodall, 1968).

The present research also contributes to the evolutionary psychology literature by suggesting a newly found signaling mechanism: energy-efficient dominance signaling. That is, a system that, as opposed to the prestige-based status signaling that invites *approach*, focuses on low-cost signals of force and intimidation to induce fear and elicit *avoidance* (e.g., wearing a negatively valenced brand such as Affliction). An example of prestige-based status signaling in the literature is recent research demonstrating that male consumers purchase more expensive products or products with larger brand logos in the presence of physically dominant (vs. nondominant) salespeople due to increased feelings of intrasexual competitiveness (Otterbring, Ringler, Sirianni, & Gustafsson, 2018). Another extant finding shows that men competing with other men reported a higher liking for, and an intent to purchase, a conspicuous luxury (vs. inconspicuous nonluxury) car, such as a Porsche or Ferrari, due to increased feelings of desire for social status (Hennighausen, Hudders, Lange, & Fink, 2016). The present research counters this assumed prestige-seeking behavior by showing that the signaling product does not always have to be expensive, high-prestige, or conspicuous in the context of IC.

The current manuscript contributes to research investigating the function of brand names. We acknowledge recent consumer research investigating the influence of negative brands on memory and liking (Guest et al., 2016) and attitude toward the product (Manolică et al., 2018). However, our research differs from these findings because we identify the precipitating antecedent conditions and the underlying process that increases consumer preference for negative brands. Antecedent catalysts and the underlying process for negative branding preference have not been directly identified and measured in experimental research. Finally, the present research has managerial implications. Our findings show that brands need not necessarily be paired with positive words. Past consumer research has advocated for a positive branding strategy, in which the use of positive words leads to increased consumer preference for the product (Gorn, 1982; Stuart, Shimp, & Engle, 1987, 1990). In contrast, we show that products paired with negative words can be valued more positively when consumers are in a cognitive mode of same-sex competition (e.g., teen consumers, extreme sports consumer segments such as Mixed Martial Arts, and rockers).

Taken together, our research fits the call for a special issue on evolutionary psychology and consumption by demonstrating a novel type of signaling that is distinct from signaling through positively valenced prestige or luxury goods. In the next section, we review literatures on anthropology and evolutionary psychology to develop the predictions regarding a male consumer's preference for negative branding during IC.

2 | CONCEPTUAL DEVELOPMENT

2.1 | Competitive motivation increases desire to signal dominance

In animal and hominid societies before the development of complex forms of symbols and language, a higher status or rank allocation was not freely *conferred by* conspecifics, but *coerced from* conspecifics. In these societies, value is inextricably tied to the body, and the animals and hominids who become the highest-ranked are those who are the biggest, fastest, and strongest: those who are able to win their dominance contests (van Lawick-Goodall, 1968). Dominance contests in the form of direct physical attacks against conspecifics occur in situations where it is unclear with regard to which of the two animals or hominids is bigger or stronger. In the course of the physical conflict, the bigger, stronger, or faster animal or hominid is able to inflict harm on the other, and in Pavlovian terms, inflict "punishers" (Rolls, 2014). When an impending competitive situation is made salient, psychobiological processes in the body increase testosterone (Archer, 1988) and other neuromodulators, increasing the primate or human's desire to signal dominance. Signaling dominance staves off attacks from potential challengers in cases where the dominance is visually associated with credible threats of physical harm (e.g., visual associations of a large and strong body, or lethal body proxies, such as sharp obsidian stones).

Research has shown that in situations where a status challenge was imminent, primates and humans avoided using an affectively positive self-presentation (e.g., appeasement grins or smiling) to avoid signaling submission, which would imply giving up valued resources such as a mating partner, food, or territory (Fox, 1969; Plutchik, 1980). Although the modern environment of a prestige-based rank allocation means that humans are normally in a cognitive mode to self-present positively to elicit higher prestige, there are theoretically specifiable conditions under which people will dynamically switch back to a default, dominance-based cognitive responding suite, especially in primarily important contexts such as mating and IC (van Lawick-Goodall, 1968). This is because mating evaluations, from early mammals to modern humans, have primarily been based on dominance qualities (e.g., height, strength), especially

in "pure" short-term mating contexts that are uncontaminated by cognitively deliberate, long-term strategic considerations (e.g., access to financial resources and coalition building). Indeed, there is preliminary evidence that just as primates in the wild physically attacked same-sex rivals when they competed for mating opportunities (van Lawick-Goodall, 1968), people in laboratory environments subjected same-sex rivals to potentially injurious loud noises when they were placed under a motivation to compete for mating opportunities (Griskevicius et al., 2009). However, all of these behaviors were costly physical exertions where the individual had to perform a behavior (e.g., subject a rival to loud noises, throw a rival through a window—a costly behavior explicitly identified by Griskevicius et al. (2009)), hence they are not energy efficient, and also lead to high risks of retaliation from rivals. Our research advances a second form of signaling that is energy-efficient, and entails lower risks and retaliation from rivals.

2.2 | Sending dominance signals via negative branding

The psychological response suite of displaying negatively valenced signals to rivals is inhibited in modern human societies because of the evolutionary transition to rank selection based on skills and knowledge. Creating value based on skills and knowledge made approach and collaboration (as opposed to avoidance and intimidation) important, as social groups learn that alphas with high intellect, knowledge and skills are able to create value much better than alphas with large size and strength (Henrich & Gil-White, 2001). The intellectual revolution typified by inventions such as the first waterproof seafaring vessel 500,000 to 900,000 years ago made social groups alter the criteria and process by which social groups assign status or rank. With intellect, skills and knowledge slowly supplanting physical size and strength as the new currency of social status (i.e., "knowledge" is the new "big"), a new psychological response suite of displaying positively valenced signals and eliciting approach from alliances (and rivals) emerged, and this associative response suite formed the basis of brands and other signaling stimuli that are now predominantly positive in valence (hence the ubiquity of "luxury" branding based on prestige signals). Positively valenced self-representation cues other people to the presence of skills and knowledge, and this "cueing response" suite elicits positive emotional responses and approach, which results in an increased number of followers, who bring (directly or indirectly) resources and mating opportunities.

The current research proposes that, despite our gradual shift from an affectively negative to an affectively positive psychological response suite in competing for status over the course of 2 million years, there are some situations that can still activate the remnants of our affectively negative psychological suite still residing in our primordial cognitive systems. When consumers are induced into IC, and when they perceive that there are no alternative pathways for quickly converting knowledge and skills into resources, they revert to an evolutionarily more ancient psychological response suite of displaying negative signals to gain and maintain status.

2.3 | Gender differences in sending dominance signals

Parental investment theory (Trivers, 1972) showed that males and females exert (or inhibit) dominance differently because of the differing costs of retaliation from rivals. Because females potentially carry a child when they are sexually active, the risks of physical retaliation from rivals is extremely high, as a physical confrontation can lead to death for the offspring (Archer, 2009). Males have lower risks as they do not physically carry an offspring, and have thus evolved to have testosterone levels approximately ten times higher than those of females (Archer, 1988), to optimize the levels of physical aggression based on benefits and costs to genetic fitness (Archer, 2006). In addition, research has shown that women experienced more negative consequences as opposed to men when they display dominance explicitly due to aversion underpinned by perceptions of counter-stereotypical behavior (Williams & Tiedens, 2016). This is because lay people believe that men should be dominant and women should be warm, thus dominant women violate gender role norms and suffer social penalties (e.g., decreased liking). To avoid social penalties, women are less likely to engage in displaying dominance. Based on these arguments, we proposed the following hypotheses:

H1: *There will be an interaction between motivation and gender on preference for negative branding, such that*

H1a: *Male consumers under a competitive (vs. neutral) motivation will have a higher preference for negative branding.*

H1b: *Female consumers under a competitive (vs. neutral) motivation will have an equally low preference for negative branding.*

H2: *The preference for negative branding proposed in Hypothesis 1 will be mediated by a desire to appear dominant among male consumers, but not among female consumers.*

2.4 | Men's IC and physical dominance

Negative signaling incurs costs, and thus should be used only when it is necessary (Laidre & Johnstone, 2013). Because dominant same-sex rivals are more likely to poach mating partners than are nondominant rivals, people have been shown to be "on guard" in the presence of a threatening (but not nonthreatening) same-sex rival (Buss & Shackelford, 1997). We predicted that one of the conditions that activate the increased preference for negatively branding oneself is when the same-sex rival that is encountered is perceived as highly dominant. In contrast, men are less likely to be willing to incur the costs of negative

branding (loss of potential followers or allies) when the same-sex rival is perceived as less dominant (hence not a threat). Formally,

H3: *There will be an interaction between motivation and a rival's perceived physical dominance on men's willingness to pay for negative branding, such that*

H3a: *Under a motivation to compete, men competing with physically dominant (vs. nondominant) men will have a higher willingness to pay for negative branding.*

H3b: *Under a neutral motivation, men in the presence of physically dominant (vs. nondominant) men will have a higher willingness to pay for negative branding, but the effect will not be as strong as those under a motivation to compete.*

2.5 | Rule out alternative explanation of perceived popularity

Nonhuman primates engage in nonverbal dominance display via chest pounding. Like primates, humans engage in visually observable dominance displays, via facial expression and body posture (Holland, Wolf, Looser, & Cuddy, 2017). An alternative explanation to the dominance signal account is that men competing with other men choose negative branding to represent themselves because of *perceived popularity* rather than *dominance signaling*. If negative branding is chosen as a means of dominance signaling among men under a motivation to compete, then a negative brand that is visually associated with a dominant posture (e.g., expansive and open body posture) should increase men's preference for negative branding, but a negative brand that is visually associated with a nondominant posture (e.g., a nonexpansive body posture) should decrease men's preference for negative branding (because the negative brand is no longer a dominance signal when it is expressed with a nondominant posture). However, if negative branding is chosen because of perceived popularity among men under a motivation to compete, then men should equally prefer negative brands associated with either a dominant posture or a nondominant posture. This is because if men choose negative branding because of its perceived popularity but not because of its dominance signal, then it does not matter whether the negative branding is visually associated with a dominance signal or a negative branding without a dominance signal: Popularity striving is more about wanting to be socially included, encouraging "approach" behavior from others, and *avoiding* social exclusion (Duclos, Wan, & Jiang, 2013; McQuarrie, Miller, & Phillips, 2013). In contrast, dominance signaling is about eliciting avoidance, and showing a *lack of concern* for social exclusion (Henrich & Gil-White, 2001; Mazur & Booth, 1998). We propose that the phenomenon regarding preference for negative branding that we document is relatively consistent with "avoidance-eliciting" dominance striving, and relatively inconsistent with "approach-eliciting" popularity striving.

To provide additional evidence at the individual consumer level, we argue that the use of negative branding as a dominance signal should also be sensitive to individual differences in intrasexual competitiveness driven by psychobiological processes such as testosterone (i.e., the degree by which each individual views same-sex interactions in competitive terms; Buunk & Fisher, 2009). Hence, the increased preference for negative branding when it is associated with a dominant body posture should occur among men who have a high psychobiological desire to compete with other men, but not among men who have a low psychobiological desire to compete with other men. Formally,

H4: *There will be an interaction between motivation, dominance posture, and individual differences in psychobiological desire to compete on men's preference for negative branding, such that*

H4a: *When induced with a motivation to compete (vs. neutral motivation), men with a high psychobiological propensity to intrasexually compete will show a higher preference for negative branding when the negative brand is visually associated with a dominant body posture (vs. a negative brand visually associated with a nondominant body posture).*

H4b: *When induced with a motivation to compete (vs. neutral motivation), men with a low psychobiological propensity to intrasexually compete will be relatively unresponsive to negative branding, showing a low preference whether the negative brand is visually associated with a dominant or a nondominant body posture.*

2.6 | Rule out alternative explanation of masculinity

A second alternative explanation is that men competing with other men choose negative branding to represent themselves because they want to be seen as *masculine* rather than *dominant*. Under this alternative explanation, one can desire to express masculinity without a desire to be dominant. To rule out the desire to be masculine as the alternative mechanism underpinning the choice for negative brands, we designed a test that independently primes masculinity versus dominance (Bosson & Michniewicz, 2013). We make the following two-fold prediction: when males are under a motivation to compete, activating dominance-related concepts should increase preference for negative branding, but activating masculine-related concepts should *decrease* preference for negative branding. This is because activating dominance-related (vs. masculine-related) concepts should specifically increase (vs. decrease) desire to compete intrasexually, and hence increase (vs. decrease) preference for negative branding. We use the research paradigm demonstrating that automatic activation of concepts could influence behavior (Chartrand, & Bargh, 1996; Srull, & Wyer, 1979).

To further rule out masculinity as an alternative explanation, we argue that this automatic activation should be nuanced and be moderated by individual differences in psychobiological desire for IC (Polo, Fernandez, Muñoz-Reyes, Dufey, & Buunk, 2018). Hence, the increased preference for negative branding after dominance priming should occur among men who have a higher psychobiological

propensity to compete with other men, but not among men who have a lower psychobiological propensity to compete with other men. Likewise, the decreased preference for negative branding after a masculinity priming should occur among men who have a high psychobiological propensity to compete with other men, but not among men who have a low psychobiological propensity to compete with other men. Formally,

H5: *There will be an interaction between type of motivation, type of concept that is primed, and individual differences in intrasexual competitiveness on men's preference for negative branding, such that*

H5a: *Under a dominance priming, men with a high desire to intrasexually compete will have a higher preference for negative branding under a competitive (vs. neutral) motivation. However, men with a low desire to intrasexually compete will be relatively unresponsive to negative branding, regardless of the motivational priming condition.*

H5b: *Under a masculinity priming, men with a high desire to intrasexually compete will have a lower preference for negative branding under a competitive (vs. neutral) motivation. However, men with a low desire to intrasexually compete will be relatively unresponsive to negative branding, regardless of the motivational priming condition.*

3 | OVERVIEW OF STUDIES

We present one pilot study and four experiments in which we examine how a motivation to compete intrasexually influences male consumer preference for negative branding using different manipulations, measures, and samples. In a pilot study, we showed that male and female memory networks have nonconsciously stored implicit associations that perceive negatively valenced words to be associated with dominance concepts (and perceive positively valenced words to be associated with prestige concepts), which is why "negative valence" (and not positive valence) is uniquely instrumental to signaling physical dominance and the possibility of inflicting physical harm. In Experiment 1, we tested Hypothesis 1 by experimentally priming male and female participants with a motivation to compete, and then measured their preference for negative brands. Also in Experiment 1, we tested Hypothesis 2 by measuring participants' desire to appear dominant and tested whether the desire to appear dominant mediated the preference for negative brands among male participants but not female participants. Experiments 2–4 focused on male participants and demonstrated the conditions that activate men's preference for negative brands. In Experiment 2, we tested Hypothesis 3 by manipulating the physical dominance of the rival, and measured male consumers' willingness to pay for negative brands. In Experiment 3, we ruled out the alternative explanation of perceived popularity (Hypothesis 4), and in Experiment 4, we ruled out the alternative explanation of masculinity (Hypothesis 5). We also measured men's individual psychobiological propensity for IC and tested its moderating role in Experiments 3 and 4. Altogether, these results support our hypothesis that male (but not female) consumers induced with competitive mindsets have an increased preference for negative branding. Moreover, the moderation and mediation patterns of this preference reflect the nonconscious weighing of benefits and costs of signaling dominance.

4 | PILOT STUDY

In our pilot study, we demonstrated that negatively valenced words are nonconsciously associated with dominance, even if negative valence and dominance are technically orthogonal concepts. We administered an implicit association test (IAT; Greenwald, Nosek, & Banaji, 2003) to assess the degree to which a number of different concepts (e.g., *dominance* vs. *prestige*) and target (e.g., *negatively valenced* vs. *positively valenced*) stimuli are associated in consumers' implicit memory networks. The idea is that a consumer can more rapidly sort stimuli when pairings between a concept and target are associated with memory, such as meat with masculinity (Rozin, Hormes, Faith, & Wansink, 2012). We predicted that consumers' key pressing patterns would reveal a significant nonconscious association between dominance and negatively valenced stimuli.

4.1 | Method

4.1.1 | Participants

We recruited 47 graduate students (66% women) from a large urban university in exchange for extra class credit. Participants ranged from 21 to 40 years old ($M = 28.79$, $SD = 4.70$).

4.1.2 | Prestige versus dominance stimuli

We created five word pairs for *prestige* (skills, success, knowledge, respect, and expertise) and *dominance* (fear, intimidation, coercion, force, and tough) concepts. We chose these words based on the nomological network where prestige refers to the process whereby higher social rank is granted to individuals who are recognized and respected for their skills, success, or knowledge, and dominance refers to an orthogonal process whereby higher social rank is obtained through the induction of fear, intimidation, and coercion (Cheng et al., 2013). A separate pretest with 100 MTurk participants (63% women, $M_{age} = 44.01$) was conducted. In the cover story, we told participants that the survey was about evaluating a person's traits, and then we randomly assigned participants to evaluate either prestige traits or dominance traits. In total, participants in each condition evaluated five traits in random order. To evaluate each trait, participants read: "If the word ___ is being used to describe a

particular person, indicate the extent to which each statement below accurately describes this person." Then, participants responded to six items measuring prestige and dominance (Cheng, Tracy, & Henrich, 2010): The first three items measured the degree to which the participant perceives the word to refer to prestige (e.g., "Others respect and admire this person;" "Others do not want to be like this person (reverse-coded);" and "Others seek this person's advice on a variety of matters") whereas the last three items measured the degree to which the participant perceives the word to refer to dominance (e.g., "This person enjoys having control over others;" "This person does not have a forceful or dominant personality (reverse-coded);" and "Some people are afraid of this person."). The items were measured on a 9-point scale (1 = *strongly disagree*, 9 = *strongly agree*). We created a prestige index and a dominance index for each word (α's > .76) and then submitted them to a repeated-measures analysis of variance with two indices as the dependent variables and condition as the independent variable. Pretest results confirmed that the word pairs differed on the prestige and dominance scales as predicted (see Table 1 for means).

4.1.3 | Positively valenced versus negatively valenced stimuli

We also created five word pairs for *positively valenced* (bright, champ, pride, star, talent) and *negative valenced* (brutal, cruel, python, shark, tornado) targets. We took these words from ANEW (Bradley & Lang, 1999) and then pretested them on a separate sample of 40 students (38% women, M_{age} = 21.80) where participants evaluated each word on pleasure (1 = *happy*, 9 = *unhappy*), valence (1 = *positive*, 9 = *negative*), and fear (1 = *not fearful at all*, 9 = *extremely fearful*). In addition, we asked pretest participants to rate dominance (1 = *not dominant at all*, 9 = *extremely dominant*), powerfulness (1 = *not powerful at all*, 9 = *extremely powerful*), and arousal (1 = *not excited at all*, 9 = *extremely excited*). At the end of the pretest, we asked participants to recall five words that they rated because research suggests that some negatively valenced brands (relative to positively valenced brands) are retained in memory for extended periods (Guest et al., 2016). Pretest results confirmed that the word pairs differed on the pleasure, valence, and fear spectrums, such that participants who rated positively valenced words felt that the words elicited higher levels of pleasure and are more positive compared to those who rated negatively valenced words. Also, participants who rated positively valenced words felt that the words elicited lower fear compared to those who rated negatively valenced words. We did not observe any difference in dominance, powerfulness, and arousal (see Table 2 for means). Also, participants in both conditions correctly recalled words to the same extent ($M_{positive}$ = 4.31, SD = 1.35 vs. $M_{negative}$ = 4.38, SD = 1.25, $t(38)$ = 0.15, p = .88). This rules out "memory" as a potential alternative explanation for participants' preference for negative brands.

4.1.4 | Procedure

Participants came to the computer lab and began the IAT procedure by placing their hands on the left and right sides of the keyboard (e.g., "E" and "I" keys). Participants then completed seven blocks of stimuli sorting trials. In each trial, participants were presented with a stimulus on the center of the screen that represented either one of the concepts (e.g., *prestige* vs. *dominance*) or targets (*positively valenced*

TABLE 1 Mean values for prestige and dominance words used in implicit association test in pilot study

Variables	Condition		*F* value	*p* value
	Prestige word	Dominance word		
	Skills	Fear		
Prestige index (α = .95)	7.56 (1.20)	4.69 (1.36)	$F(1, 98)$ = 247.74	<.001
Dominance index (α = .86)	2.88 (1.75)	6.81 (2.45)	$F(1, 98)$ = 29.33	<.001
	Success	Intimidation		
Prestige index (α = .94)	7.85 (1.06)	5.72 (1.51)	$F(1, 98)$ = 198.30	<.001
Dominance index (α = .85)	3.41 (1.99)	7.85 (1.36)	$F(1, 98)$ = 54.47	<.001
	Knowledge	Coercion		
Prestige index (α = .96)	7.67 (1.39)	4.79 (1.46)	$F(1, 98)$ = 200.60	<.001
Dominance index (α = .91)	3.05 (1.86)	7.44 (1.76)	$F(1, 98)$ = 67.75	<.001
	Respect	Force		
Prestige index (α = .92)	7.81 (1.26)	4.46 (1.89)	$F(1, 98)$ = 121.69	<.001
Dominance index (α = .85)	4.06 (2.07)	7.43 (1.57)	$F(1, 98)$ = 72.45	<.001
	Expertise	Tough		
Prestige index (α = .87)	7.82 (1.22)	4.91 (1.40)	$F(1, 98)$ = 40.69	<.001
Dominance index (α = .76)	6.13 (1.41)	6.23 (1.49)	$F(1, 98)$ = 20.76	<.001

Note: Means are reported in the table; standard deviations are in the parentheses.

TABLE 2 Mean values on pleasure, valence, fear, dominance, powerfulness, and arousal used in IAT in pilot study

Variables	Condition		*t* value	*p* value
	Positive word	Negative word		
	Bright	Brutal		
Pleasure	3.25 (2.24)	6.46 (1.72)	$t(38) = 5.13$	<.001
Valence	3.00 (1.90)	7.21 (1.35)	$t(38) = 8.21$	<.001
Fear	3.63 (1.71)	5.88 (1.60)	$t(38) = 4.25$	<.001
Dominance	4.44 (2.03)	5.38 (1.72)	$t(38) = 1.57$	.124
Powerfulness	4.94 (1.84)	5.42 (1.56)	$t(38) = 0.89$	.381
Arousal	4.31 (2.36)	4.21 (1.53)	$t(38) = 0.17$	.866
	Champ	Cruel		
Pleasure	3.31 (1.99)	6.96 (1.97)	$t(38) = 5.72$	<.001
Valence	3.13 (2.28)	7.17 (1.69)	$t(38) = 6.45$	<.001
Fear	3.94 (2.29)	6.38 (1.58)	$t(38) = 3.98$	<.001
Dominance	5.38 (2.22)	5.25 (1.70)	$t(38) = 0.20$	.841
Powerfulness	6.25 (2.35)	5.50 (1.79)	$t(38) = 1.14$	.260
Arousal	6.13 (2.80)	4.67 (2.08)	$t(38) = 1.89$	.066
	Pride	Python		
Pleasure	3.00 (2.07)	6.00 (2.17)	$t(38) = 4.37$	<.001
Valence	3.44 (1.79)	6.58 (1.69)	$t(38) = 5.63$	<.001
Fear	3.56 (2.10)	6.79 (1.64)	$t(38) = 5.45$	<.001
Dominance	4.56 (1.75)	5.42 (1.86)	$t(38) = 1.46$	.154
Powerfulness	5.88 (2.25)	5.38 (1.58)	$t(38) = 0.83$	.413
Arousal	5.69 (2.02)	4.92 (1.89)	$t(38) = 1.23$	.226
	Star	Shark		
Pleasure	2.88 (2.53)	5.63 (2.00)	$t(38) = 3.84$	<.001
Valence	2.88 (1.93)	5.33 (1.63)	$t(38) = 4.34$	<.001
Fear	3.25 (2.62)	6.50 (1.72)	$t(38) = 4.75$	<.001
Dominance	5.50 (2.16)	5.54 (1.93)	$t(38) = 0.06$	.950
Powerfulness	6.38 (2.09)	5.58 (2.02)	$t(38) = 1.20$	.239
Arousal	6.25 (2.52)	5.21 (1.98)	$t(38) = 1.46$	.152
	Talent	Tornado		
Pleasure	2.69 (1.99)	6.46 (1.91)	$t(38) = 6.01$	<.001
Valence	2.38 (1.89)	6.67 (1.81)	$t(38) = 7.22$	<.001
Fear	3.75 (2.52)	6.38 (2.00)	$t(38) = 3.67$	.001
Dominance	5.06 (2.79)	5.96 (1.90)	$t(38) = 1.21$	.234
Powerfulness	6.38 (2.31)	5.96 (1.92)	$t(38) = 0.62$	.539
Arousal	6.06 (2.32)	5.21 (1.89)	$t(38) = 1.28$	.209

Note: Means are reported in the table; standard deviations are in the parentheses.

stimuli vs. *negatively valenced stimuli*). Each participant then sorted the stimuli by either striking the "E" or "I" key on the keyboard as quickly as possible, while the computer recorded each participant's response speed in ms. Concepts and targets are assigned to the left/right sides for sorting (e.g., press "E" key for all *prestige + positively valenced* stimuli; press "I" key for all *dominance + negatively valenced* stimuli). Hand assignments varied by blocks and were displayed in the upper corners of the computer screen (see Appendix 1).

The idea behind the IAT is that one can more quickly sort stimuli when pairings are compatible with one's implicit associations in memory. For example, if one implicitly sees *negatively valenced stimuli* as more dominant than *positively valenced stimuli*, then one should be able to sort more rapidly when one sees a *negatively valenced word* and *dominance* on the same side (compatible block). Conversely, one should be slower to sort when one sees a *negatively valenced word* and *dominance concept* on different sides (incompatible block). Across trials, participants completed both compatible and incompatible blocks and response speeds were compared within participants. A standardized difference score (*D*-score) is calculated for each participant by the IATGEN tool (Carpenter et al., 2019). A *D* score of 0 indicates that one was equally fast in both conditions (no implicit associations either way). A positive *D* score indicates that one was faster in the compatible block (e.g., *negative valence* implicitly seen as more dominant); a negative *D* score indicates one was faster in the incompatible block (e.g., *negative valence* implicitly seen as more prestigious).

4.2 | Results and discussion

Following the guidelines by Greenwald et al. (2003), the IATGEN tool automatically dropped two participants from the analysis due to excessive speed (i.e., over 10% of trials are <300 ms). Consistent with our prediction, a one sample *t*-test revealed that the *D* score is positive ($M = 0.81$, $SD = 0.43$) and is significantly higher than zero ($t(44) = 12.75$, $p < .001$, $d = 1.90$). Thus, these results provide evidence that participants (both males and females) chronically have automatic nonconscious associations between negatively valenced words and dominance concepts as indicated by a positive *D* score. Although male and female participants nonconsciously associate negatively valenced words with dominance, we hypothesized that only male participants will actually send dominance signals via negative branding when induced with a motivation to compete, because of the sexually dimorphic hormonal triggers designed to induce males to intimidate rivals and retain resources, but induce females to protect their gestating offspring by avoiding physical retaliation (Archer, 1988; Mazur & Booth, 1998). We tested this hypothesis in Experiment 1.

5 | EXPERIMENT 1

We had three goals in this experiment. First, we tested our prediction that males who are induced to compete with other males would increase their preference for negative branding, but that this preference for negative branding under a motivation to compete would not occur among females (Hypothesis 1). Second, we tested whether the dominance signaling process underpins the preference for negative branding among males but not females (Hypothesis 2). Third, we wanted to rule out an alternative explanation. One could argue that men seek to be unique in IC. If, for example, they believe that nonconformity (coolness and uniqueness) is desired by potential mating partners, this will be reflected in their choices.

Words associated with aggression or violence, although clearly negative in modern society, *may* carry associations of coolness. Cool brands are perceived to be popular (Warren, Batra, Loureiro, & Baggozi, 2019). Given the challenges of gaining attention during IC, it can help to stand out by being perceived as cool or unique. Hence, we measured the desire to appear cool or unique in this experiment.

5.1 | Method

5.1.1 | Participants and design

We recruited 159 undergraduate and graduate students (52% women) from a large urban university in exchange for extra class credit. Participants ranged from 17 to 41 years old (M_{age} = 23.87, *SD* = 5.37). All participants reported heterosexual orientation. The overall design of the study was 2 (motivation: neutral vs. competitive) x 2 (participant sex: female vs. male) where the first variable was experimentally manipulated between subjects and the second variable was manipulated by natural biological processes at birth (biological gender).

5.1.2 | Procedure

After the experiment administrator randomly assigned participants into one of the two motivation conditions, participants were induced into different motivational states by reading a short story varying on the inducement of a cognitive state of competitiveness but not valence (Griskevicius, Tybur, & Van den Berg, 2010). In the neutral motivation (control condition), participants read a story where they anticipated going to a concert with a same-sex friend. Before going to a concert, participants imagined losing the ticket, but were told that a friend showed up with the ticket, and then they both head off to a concert in a great mood. In the motivation to compete condition, participants imagined that they recently graduated from college and were on their first day of a high status job. Participants then learned that they would have to compete with same-sex others to get promoted, and subsequently mentally prepared to compete with each other. Even though Griskevicius, Tybur, and Van den Bergh (2010) had pretested the manipulations to vary on competitiveness but not valence, we performed our own pretest to determine whether the scenario influenced participants' motivational states as intended, while keeping valence equal in both conditions. We conducted a pretest with a separate sample of 39 MTurk participants (56% women, M_{age} = 44.03) where participants indicated their feelings on three different dimensions: *desire to compete* ("Do you feel competitive?" and "Are you motivated to compete with others?" *r* = 0.96), *positive arousal* ("Do you feel enthusiastic?" "Do you feel excited?" *r* = 0.95), and *negative arousal* ("Do you feel frustrated?" "Do you feel angry?" *r* = 0.87). In addition, we asked participants to indicate how easy, realistic, and believable the scenario was (Chen, Mathur, & Maheswaran, 2014; α = 0.92). All measures were completed on a 9-point scale (1 = *not at all*, 9 = *very much*). As anticipated, the two scenarios elicited the intended motivational states and associated feelings. Compared with neutral motivation, participants in the competitive motivation felt more competitive ($M_{competitive}$ = 7.97, *SD* = 0.91 vs. $M_{neutral}$ = 4.50, *SD* = 3.00, $t(37) = 4.83$, $p < .001$) but participants in both conditions elicited similar levels of positive arousal ($M_{competitive}$ = 7.82, *SD* = 1.02 vs. $M_{neutral}$ = 6.63, *SD* = 2.90, $t(37) = 1.69$, $p = .10$) and negative arousal ($M_{competitive}$ = 3.29, *SD* = 2.01 vs. $M_{neutral}$ = 2.93, *SD* = 2.18, $t(37) = 0.54$, $p = .59$). In addition, participants rated the two scenarios to be equally realistic and easy to imagine ($M_{competitive}$ = 7.09, *SD* = 1.89 vs. $M_{neutral}$ = 7.97, *SD* = 1.75, $t(37) = 1.51$, $p = .14$).

After reading the scenario, participants imagined attending a social gathering and chose a product to represent themselves at the event. In the neutral motivation condition, participants read: "Suppose you are now invited to a social gathering with other men (male participants)/women (female participants). Which of these two perfumes would wear to the event?" In the competitive motivation condition, participants read: "Suppose you are now invited to a social gathering with other men (male participants)/women (female participants) who are competing for the position. Which of these two perfumes would you wear to the event?" The stimuli were identical (see Appendix 2) except for the brand names (positive valence: Talent, negative valence: Tornado) that appeared on the product stimuli. We took these words from our pilot study, which were also pretested in ANEW (Bradley & Lang, 1999).

After participants chose the brand they preferred, we measured our mediator. Participants indicated the degree to which they felt the following items (Cheng et al., 2013): "I want to display toughness over other men (male participant)/other women (female participant);" I want to appear forceful;" and "I want to exert control over other men (male participant)/women (female participant)." (1 = *not at all*, 9 = *very much*). These responses were combined into a "desire to appear dominant" index (α = 0.73). After participants had completed all measures, we performed a manipulation check to ensure that our manipulation was active during the completion of product choice (*r* = .73). To rule out the possibility that male participants chose negative branding because they wanted to be seen as cool or unique, we asked participants to answer the following items (Warren & Campbell, 2014): "I want to be seen as cool;" "I want to be seen as unique." We then averaged participants' responses (*r* = .60).

Finally, participants answered some questions regarding sexual orientation (1 = *I'm attracted to people of the opposite-sex*, 2 = *I'm attracted to people of the same-sex*) and relationship status (1 = *I'm single*, 2 = *I'm dating*, and 3 = *I'm married*) and were thanked for their participation. We controlled for participants' age in the main analysis because research has shown that adolescent men and women reported higher levels of intrasexual competitiveness compared to older same-sex counterparts (Polo et al., 2018). In addition, we controlled for participants' relationship status in the main analysis because research has shown that an unmarried individual shows an increased direct aggression when competing with rivals, compared to a married individual (Griskevicius et al., 2009).

5.2 | Results and discussion

5.2.1 | Manipulation check

As anticipated, the scenarios elicited the intended motivational states and associated feelings. Compared to participants in the neutral motivation condition ($M = 5.07$, $SD = 1.52$), participants in the competitive motivation condition had a higher desire to compete ($M = 6.16$, $SD = 1.34$, $t(157) = 4.80$, $p < .001$).

5.2.2 | Product choice

We ran a binary logistic regression on whether or not the participant chose the negative branding product (positive branding = 0, negative branding = 1) as a function of motivation (neutral = 0, competitive = 1), gender (female = 0, male = 1), and their interaction. Supporting Hypothesis 1, a binary logistic regression revealed a significant 2-way interaction, controlling for age and relationship status ($B = 1.38$, $SE = 0.72$, $z = 1.92$, $p = .054$, $\eta^2 = 0.023$). Consistent with Hypothesis 1a, males in the motivation to compete condition significantly chose more negative branding ($M = 60\%$) than did those in the neutral motivation condition ($M = 36\%$, $B = 0.98$, $SE = 0.49$, $z = 2.02$, $p = .044$). In contrast, and also consistent with Hypothesis 1b, females in the motivation to compete condition ($M = 24\%$) chose negative branding equally as much as did those in the neutral motivation condition ($M = 32\%$, $B = -0.40$, $SE = 0.51$, $z = -0.79$, $p = .43$).

5.2.3 | Moderated mediation analyses

We tested a moderated mediation model using 5,000 bootstrapped samples (PROCESS Model 7, Hayes, 2013). Hypothesis 2 predicted a conditional indirect effect of motivation (*X*) on preference for negative branding (*Y*) through desire to appear dominant (*Med*) when gender (*Mod*) is male but not female.

As shown in Figure 1, the model reported a significant interaction between motivation and gender on the *desire to appear dominant* (path a: $B = 1.24$, $SE = 0.49$, $t(153) = 2.55$, $p = .012$). Controlling for motivation, the desire to appear dominant had a significant effect on preference for negative branding (path b: $B = 0.23$, $SE = 0.12$, $z = 1.93$, $p = .05$). After controlling for the desire to appear dominant, the direct effect of motivation on preference for negative branding was no longer significant (path c': $B = 0.21$, $SE = 0.34$, $z = 0.61$, $p = .54$), suggesting that *desire to appear dominant* was the underlying mediator for increased preference in negative branding. This series of results support the indirect effect as indicated by a significant moderated mediation index ($B = 0.29$, $SE = 0.21$, 95% confidence interval (CI): [0.01, 0.86]). To probe the moderation of the indirect effect, the bootstrap method provides the estimates of the conditional indirect effect of *X* on *Y* through *Med* at various values of *Mod*, and conducts inferential tests of the effect at those values. Supporting Hypothesis 2, the indirect effect (path c) was significant when gender was male ($B = 0.23$, $SE = 0.17$, 95% CI: [0.01, 0.67]), but not when gender was female ($B = -0.05$, $SE = 0.10$, 95% CI: [−0.32, 0.09]).

We performed a similar moderated mediation analysis with the desire to appear cool and unique as a potential mediator. Results revealed that the index of moderated mediation was not significant ($B = 0.01$, $SE = 0.09$, 95% CI: [−0.0830, 0.2924]). Thus, this rules out the explanation that males choose negative branding to signal uniqueness/coolness (Warren et al., 2019). In sum, the first experiment showed that inducing a competitive (vs. neutral) motivation activates the desire to increase dominance signaling for males but not females, which in turn, increased men's preference for negative branding. These results suggest that these differences are hormonally driven and sexually dimorphic, given that females also have the nonconscious association between negatively valenced stimuli and dominance encoded in implicit memory networks as indicated in the pilot study (but females do not translate

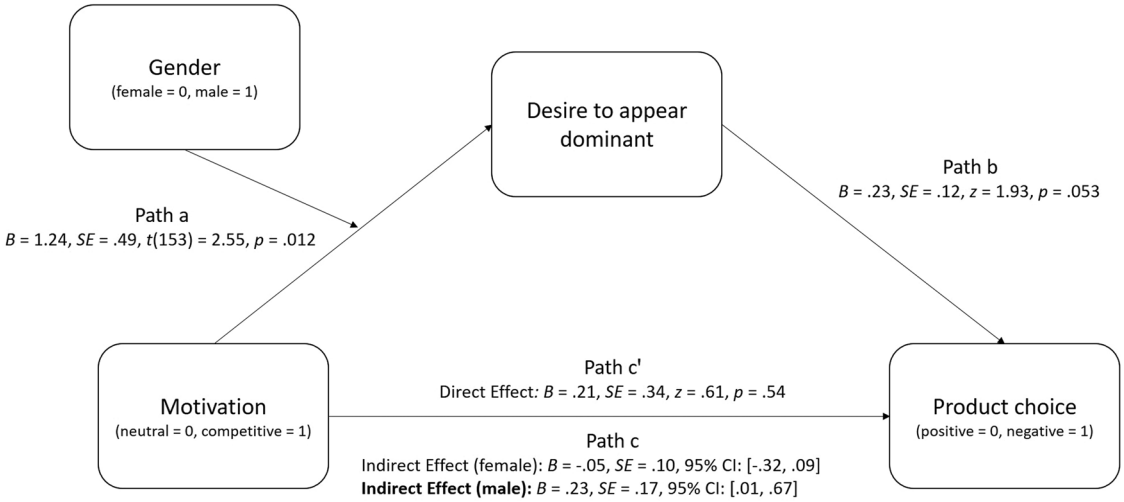

FIGURE 1 Results showing moderated mediation in Experiment 1. Bold indicates a significant indirect effect of motivation on product choice through desire to appear dominant

the nonconscious associations into actual behavior because females avoid physical retaliation). In the subsequent experiments, we focused on male participants and provided further support for dominance signaling as the underpinning mechanism behind male consumers' preference for negative branding.

6 | EXPERIMENT 2

In this experiment, we tested Hypothesis 3 by manipulating the degree of physical dominance of other men. A dominance signal is only needed in the presence of threatening rivals, but not in the presence of nonthreatening rivals (Buss & Shackelford, 1997; Otterbring et al., 2018). We also measured the willingness to pay for products with negative branding instead of measuring the tendency to choose products with negative branding. We predicted that male consumers competing with other males who are bigger and stronger (physically dominant) would indicate a higher willingness to pay for negative branding. However, male consumers competing with other males who are smaller and weaker (physically nondominant) would indicate a lower willingness to pay for negative branding, because smaller and weaker rivals are not perceived as a threat. In addition, we predicted that male consumers under a neutral motivation in the presence of physically dominant men would be more willing to pay for negative branding than those in the presence of physically nondominant men, although the effect will not be as strong as those who are manipulated to be under a motivation to compete.

6.1 | Method

6.1.1 | Participants and design

We recruited 200 males who reside in the United States from MTurk in exchange for $0.65 each. We excluded 10 participants who had reported a homosexual orientation and five participants who spent <90 s to complete the experiment, yielding 185 heterosexual male participants in the main analysis. Participants ranged from 22 to 71 years old (M_{age} = 40.75, SD = 11.66). The overall design of the study was a 2 (motivation: neutral vs. competitive) × 2 (physical dominance: low vs. high), between-subjects design.

6.1.2 | Procedure

We first asked participants to indicate their gender and age. We then manipulated the participant's motivational state. Similar to Experiment 1, participants read a scenario to induce either a neutral motivation or a motivation to compete. Next, we manipulated the physical dominance of other men at the social gathering using similar descriptions as did past researchers (Otterbring et al., 2018). In the physically dominant rival condition, participants imagined attending a social gathering where the passage describes other men who are not explicitly described as rivals (neutral motivation) versus rivals (competitive motivation) who are tall, athletic, and dominant. In the physically nondominant rival condition, participants imagined attending a party where other men were around but not competitive (neutral motivation), versus a party where rivals (competitive motivation) were small, nonathletic, and nondominant.

Following the scenario, participants viewed the pictures of negatively valenced brand stimuli (Appendix 2) and then indicated their willingness to pay on the following measures (Rucker & Galinsky, 2008): "The retail price of the t-shirt with the word "Scorch" is $10. How much would you be willing to pay for it?" and "The retail price of the cap with the word "Brutal" is $10. How much would you be willing to pay for it?" (1 = *10% of the retail price*, 12 = *120% of the retail price*). Similar to Experiment 1, the words "Brutal" and "Scorch" were chosen from ANEW (Bradley & Lang, 1999). A separate pretest with 42 men recruited from MTurk (M_{age} = 43.24) was conducted to ensure that these words are perceived as equally negatively valenced. Participants rated either positively valenced words or negatively valenced words on the six dimensions and then recalled the words as they did in the Pilot Study. As anticipated, compared to those in the positively valenced word condition, participants in the negatively valenced word condition rated the word to be more negative (M_{brutal} = 6.68, SD = 1.91 vs. M_{bright} = 2.90, SD = 1.41, $t(40)$ = 7.23, p < .001) and more fear-inducing (M_{brutal} = 5.36, SD = 2.11 vs. M_{bright} = 2.15, SD = 1.63, $t(40)$ = 5.49, p < .001). Similarly, compared to those in the positively valenced word condition, participants in the negatively valenced word condition rated the word to be more negative (M_{scorch} = 6.59, SD = 1.68 vs. M_{star} = 3.40, SD = 1.67, $t(40)$ = 6.17, p < .001) and more fear-inducing (M_{scorch} = 5.73, SD = 2.00 vs. M_{star} = 2.40, SD = 1.73, $t(40)$ = 5.73, p < .001). For other dimensions, there were no significant differences, p > .05. Also, participants had equal memory for positive and negative words, as participants in positive and negative conditions recalled words equally successfully ($M_{negative}$ = 1.77, SD = 0.61 vs. $M_{positive}$ = 1.95, SD = 0.22, $t(40)$ = 1.22, p = .23). After the dependent measures, participants completed a manipulation check for motivation using the same two items as in Experiment 1 (r = .65). Participants also completed a manipulation check for physical dominance by rating whether the other men were (1 = *small/nonathletic/nondominant*, 9 = *tall/athletic/dominant*; α = .99).

Because past research has shown that male consumers reacted with stronger feelings of intrasexual competitiveness when in the presence of physically dominant (vs. nondominant) salespeople (Otterbring et al., 2018), we measured the male participant's propensity to engage in IC in the main analysis. Participants completed a 12-item IC scale (ICS; Buunk & Fisher, 2009). Examples of these items are: "I can't stand it when I meet another man who is more attractive than I am," "I always want to beat other men," and "I wouldn't hire a highly competent man as a colleague." Participants' responses were combined (α = .85). We also controlled for participants' age and relationship status, just as we did in Experiment 1.

6.2 | Results and discussion

6.2.1 | Manipulation checks

Results showed that male participants induced to have a motivation to compete ($M = 7.15$, $SD = 1.74$) showed a higher desire to compete compared to those under neutral motivation ($M = 4.85$, $SD = 1.91$, $t(183) = 8.57$, $p < .001$). Results also showed that male participants in the physically nondominant condition ($M = 2.93$, $SD = 2.27$) perceived that other men are less dominant compared to participants in the physically dominant condition ($M = 7.86$, $SD = 1.53$, $t(183) = 17.41$, $p < .001$).

6.2.2 | Willingness to pay for t-shirt

Supporting Hypothesis 3, a 2 (motivation) × 2 (physical dominance) analysis of covariance (ANCOVA) with IC, age, and relationship status as covariates revealed a significant interaction ($F(1, 178) = 4.13$, $p = .044$, $\eta^2 = 0.023$, see Figure 2), along with significant effects of age ($F(1, 178) = 4.72$, $p = .031$) and IC ($F(1, 178) = 21.65$, $p < .001$). Next, we investigated the nature of this interaction at each level of motivation. Under a motivation to compete, male participants competing with a physically dominant rival ($M = 6.73$, $SD = 3.50$) indicated a higher willingness to pay for a negatively branded t-shirt compared to male participants competing with a physically nondominant rival ($M = 5.02$, $SD = 3.76$, $F(1, 178) = 5.09$, $p = .025$, $\eta^2 = 0.028$), consistent with Hypothesis 3a. However, under a neutral motivation, male participants in the presence of physically dominant men ($M = 6.06$, $SD = 3.37$) indicated a similar willingness to pay for a negatively branded t-shirt as did those in the presence of physically nondominant men ($M = 6.14$, $SD = 3.56$, $F(1, 178) < 1$, $p = .53$), as predicted by Hypothesis 3b.

6.2.3 | Willingness to pay for cap

Supporting Hypothesis 3, a 2 (motivation) × 2 (physical dominance) ANCOVA revealed a significant interaction ($F(1, 178) = 3.78$, $p = .05$, $\eta^2 = 0.021$, see Figure 2), along with a significant effect of IC ($F(1, 178) = 25.77$, $p < .001$). Under a motivation to compete, male participants who perceived that they were competing with physically dominant rivals ($M = 6.35$, $SD = 3.78$) indicated a higher willingness to pay for a negatively branded cap compared to men who perceived that they were competing with physically nondominant rivals ($M = 4.72$, $SD = 3.67$, $F(1, 178) = 4.52$, $p = .035$, $\eta^2 = 0.025$), as predicted by Hypothesis 3a. However, under a neutral motivation, male participants in the presence of physically dominant men ($M = 5.45$, $SD = 3.30$) indicated a similar willingness to pay for a negatively branded cap as did those in the presence of physically nondominant men ($M = 5.57$, $SD = 3.53$, $F(1, 178) < 1$, $p = .53$), consistent with Hypothesis 3b.

Experiment 2 shows that men competing with other men who are physically stronger and bigger were willing to pay more for negative branding as opposed to men competing with other men they perceive to be physically weaker and smaller. However, we did not observe such a pattern of results among men who were induced to have a neutral motivation. In the subsequent experiments, we build on the results of the first two experiments and aimed to rule out additional alternative explanations for men's preference for negative branding when they are motivated to compete (e.g., perceived popularity, masculinity).

7 | EXPERIMENT 3

Experiment 3 tested Hypothesis 4. The goal was to rule out the alternative explanation of perceived popularity. Warren et al. (2019)

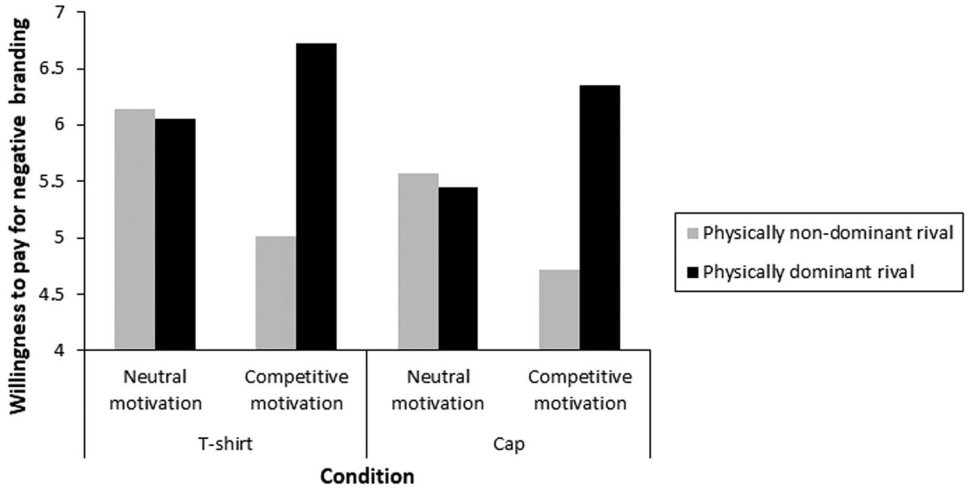

FIGURE 2 Results showing 2-way interaction between motivation and a rival's level of physical dominance on willingness to pay for negative branding among male consumers in Experiment 2

suggests that what is cool is also perceived as popular, and Experiment 1 shows that the increased choice for negative brands was not driven by perceived coolness or uniqueness. We can provide additional evidence against the alternative mechanism of perceived popularity by manipulating visual associations of dominance and measuring consumer preference. If participants chose negative branding because of perceived popularity (and not because the negative brand serves as a dominance signal), then a negative brand would be highly preferred regardless of whether it is associated with a dominant or nondominant posture. We manipulated motivation (neutral vs. competitive) and whether the visually observable body posture associated with the brand is dominant or nondominant (Holland et al., 2017). We also tested the moderating role of men's individual differences in psychobiological desire for IC (low vs. high) using the ICS (Buunk & Fisher, 2009). Our predicted results would provide support to our dominance signaling account, such that men with a high individual difference propensity to compete, when experimentally induced to have a competitive motivation, would choose negative branding when the brand is associated with a dominant posture. However, when the negative branding is associated with a nondominant posture, the increase in preference for negative branding should be eliminated. In addition, we predicted that the increased preference for negative branding would be significantly weakened among men with a chronically low psychobiological propensity to compete (e.g., low IC scores), because they do not have a desire to compete or dominate rivals, hence lowering their motivation to send a dominance signal via negative branding.

7.1 | Method

7.1.1 | Participants and design

We recruited 210 males who reside in the United States from MTurk in exchange for $0.30 each. Using similar exclusion criteria as in Experiment 2, we excluded 15 participants who had reported a homosexual orientation and three participants who spent <90 s to complete the survey. We also excluded another 10 participants who had already participated in the same type of experiment, yielding 182 heterosexual male participants in the main analysis. Participants were from 22 to 78 years old (M_{age} = 39.53, SD = 12.24). The overall design of the study was a 2(motivation: neutral vs. competitive) × 2(dominance posture: nondominant vs. dominant) × 2 (IC: low vs. high) where the first two factors being manipulated were between-subjects, and the third factor was an individual differences measure.

7.1.2 | Procedure

After participants indicated their gender and age, we manipulated the participant's motivational state. We controlled for the scenario such that participants in both motivation conditions had the same job context (adapted from Hennighausen et al., 2016; see Appendix 3). A separate pretest with 39 male participants recruited from MTurk (M_{age} = 42.97) was conducted. Participants read one of the two scenarios and then answered the extent to which the scenario made them feel competitive (r = .93). We also measured arousal (r = .93), negative emotions (r = .77), and scenario realism/perceived ecological validity (α = .92) using the same scales as in Experiment 1. Results confirmed our manipulation ($M_{competitive}$ = 7.33, SD = 2.14 vs. $M_{neutral}$ = 4.63, SD = 2.70, $t(37)$ = 3.46, p = .001), and also showed that the two scenarios did not differ on arousal ($M_{competitive}$ = 7.20 vs. $M_{neutral}$ = 7.32, p = .84), negative emotion ($M_{competitive}$ = 2.20 vs. $M_{neutral}$ = 2.05, p = .77), and scenario realism/perceived ecological validity ($M_{competitive}$ = 7.47 vs. $M_{neutral}$ = 6.67, p = .16).

Next, participants imagined attending a social gathering where they had to present themselves to other men who are not rivals in a noncompetitive context (vs. men who are rivals in a competitive context). Afterward, participants chose the product they would wear to the gathering portrayed in a dominant (vs. nondominant) body posture (Holland et al., 2017). Participants in the nondominant posture condition viewed a t-shirt with the word "Brutal" worn by a male model with a nonexpansive body (standing straight), whereas participants in the dominant posture condition viewed the same t-shirt worn by a male model with an expansive and outwardly extended arms and legs (see Appendix 2). After viewing the stimuli, participants indicated their willingness to pay for the t-shirt using the Rucker and Galinsky (2008) willingness to pay scale: "Assume that the retail price of a T-shirt with the word Brutal is $10. How much would you be willing to pay for the shirt?" (1 = *10% of the retail price*, 12 = *120% of the retail price*). Immediately after responding to the willingness to pay measure, participants rated the extent they believed that the t-shirt represented themselves at the event: "How much did the t-shirt you wear to the social gathering represent your feelings and self-expression?" (1 = *not at all*, 9 = *very much*).

After collecting the dependent measures, participants completed manipulation checks for motivation (1 = *not competing at all/networking with others*, 9 = *extremely competitive/competing with others*, r = .82) and the manipulation check for dominance posture (1 = *not dominant/powerful/strong at all*, 9 = *very dominant/powerful/strong*, α = .95). Finally, participants completed a 12-item ICS scale (Buunk & Fisher, 2009; α = .87) where higher scores refer to a higher psychobiological propensity for intrasexual competitiveness.

7.2 | Results and discussion

7.2.1 | Manipulation checks

Results showed that males induced to have a motivation to compete (M = 7.21, SD = 1.90) showed a higher desire to compete compared to those under a neutral motivation (M = 4.36, SD = 2.42, $t(180)$ = 8.91, p < .001). Results also showed that males in the dominant posture condition (M = 6.58, SD = 1.60) perceived that the body posture was more dominant compared to those in the nondominant posture condition (M = 3.79, SD = 2.30, $t(180)$ = 9.42, p < .001).

7.2.2 | Willingness to pay

We ran a regression on the willingness to pay for negative branding measure as a function of motivation (neutral = 0, competitive = 1), dominance signal in posture (nondominant = 0, dominant = 1), IC, and all interactions. We also included covariates for the participant's age and relationship status in the analysis as per previous experiments. The regression model was statistically significant (R^2 = .25, $F(9, 172)$ = 6.29, p < .001). Supporting Hypothesis 4, results revealed a significant 3-way interaction (B = 1.18, SE = 0.54, $t(172)$ = 2.17, p = .031), along with significant effects of IC (B = 0.95, SE = 0.29, $t(172)$ = 3.29, p = .001) and relationship status (B = 0.48, SE = 0.23, $t(172)$ = 2.09, p = .039). No other effects or interactions were significant. IC is a continuous variable in this experiment. Thus, to explore the three-way interaction for a continuous variable, we used the Johnson-Neyman "floodlight" approach (Spiller, Fitzsimons, Lynch, & McClelland, 2013). The floodlight analysis revealed a significant interaction (motivation × dominance posture) at IC scores above 5.34 out of 9 (B_{JN} = 2.37, SE = 1.20, t = 1.97, p = .05), but not at IC scores below 5.34 out of 9 (see Figure 3a,b).

Decomposing the 2-way interaction at IC scores 6.17 out of 9 (or at 90th percentile) revealed a significant interaction (B_{JN} = 3.34, SE = 1.55, t = 2.16, p = .033), such that inducing a competitive (vs. neutral) motivation significantly increased men's willingness to pay for negative branding when it is associated with a dominant posture ($M_{competitive}$ = 6.44 vs. $M_{neutral}$ = 4.49). This result is consistent with the account that dominance signaling underpins preference for negative branding when consumers are in a competitive state. In contrast, inducing a competitive (vs. neutral) motivation *decreased* men's willingness to pay for negative branding when it is associated with a nondominant posture

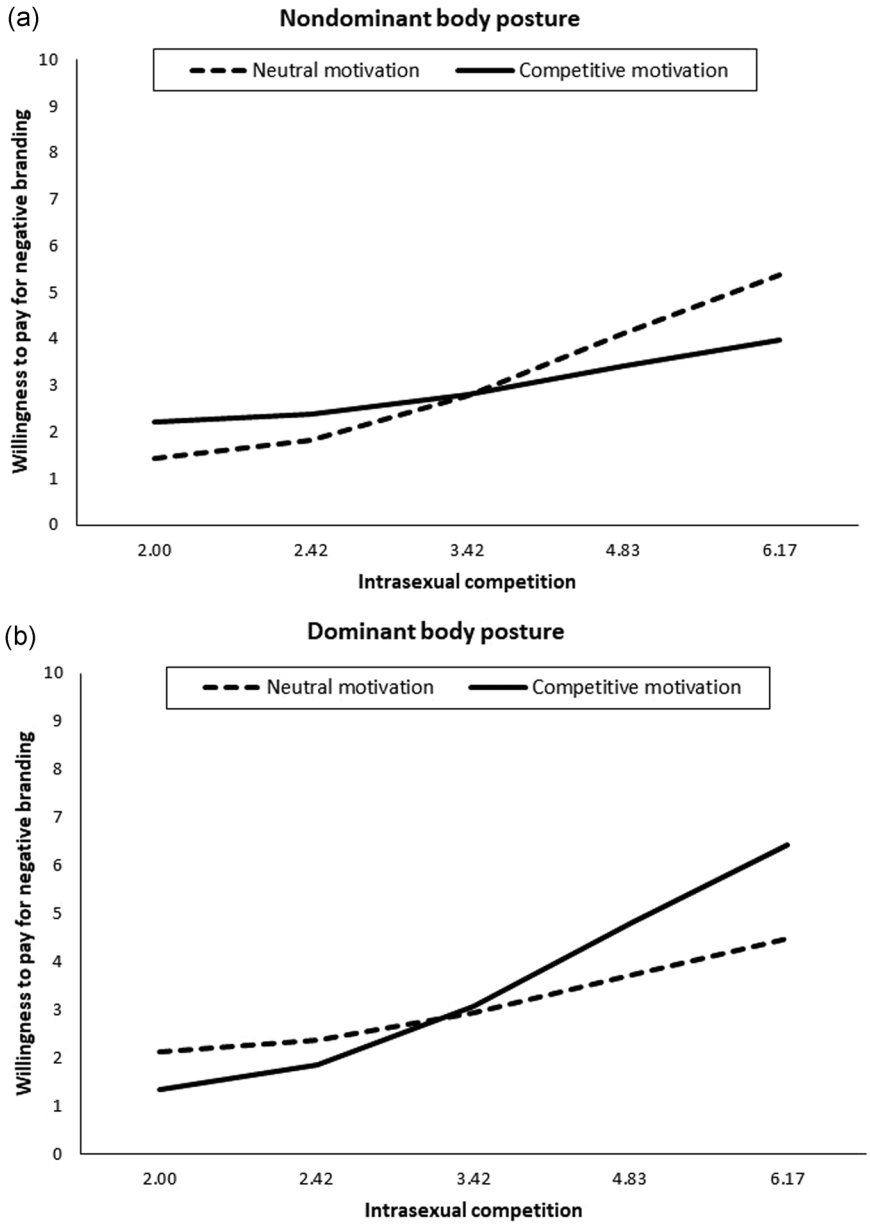

FIGURE 3 (a) Results illustrate the effect of motivation x individual differences in desire for IC scores on willingness to pay for a negative brand when it is associated with a nondominant body posture (Experiment 3). The Johnson-Neyman point is significant at IC = 5.34 out of 9 (p = .05). Lines depict means at 10th, 25th, 50th, 75th, and 90th percentiles of IC scores. (b) Results illustrate the effect of motivation × individual differences in desire for IC scores on willingness to pay for a negative brand when it is associated with a dominant posture (Experiment 3). The Johnson-Neyman point is significant at IC = 5.34 out of 9 (p = .05). Lines depict means at 10th, 25th, 75th, and 90th percentiles of IC scores. IC, intrasexual competition

($M_{competitive}$ = 3.99 vs. $M_{neutral}$ = 5.38), also consistent with the dominance signaling account. Thus, the appeal of negative branding is lost when the negative brand is perceived to be nondominant (due to visual associations added to the word). This pattern of results did not occur at IC scores 2.00 out of 9 (or at the 10th percentile; B_{JN} = −1.58, SE = 1.29, t = -1.23, p = .22). Low IC men, who have a chronically low desire to compete or express dominance, were relatively unresponsive even when induced with a competitive motivation: they indicate a similarly low preference for negative branding associated with a dominant posture as those in the neutral condition ($M_{competitive}$ = 1.35 vs. $M_{neutral}$ = 2.12). Similarly, low IC men induced with a competitive motivation indicated a similarly low preference for negative branding when associated with a nondominant posture as those in the neutral condition ($M_{competitive}$ = 2.23 vs. $M_{neutral}$ = 1.43). These patterns of results support Hypotheses 4a and 4b.

7.2.3 | Additional analyses

We performed a 3-way interaction (motivation x dominance posture × IC) on the follow-up measure (i.e., "How much did the t-shirt you wear to the social gathering represent your feelings and self-expression?"). Results showed that the 3-way interaction was not significant (B = −0.37, SE = 0.53, t(172) = −0.70, p = .49), but revealed a significant effect of motivation (B = −2.84, SE = 1.35, t(172) = −2.10, p = .037) and a significant 2-way interaction (motivation × IC; B = 0.77, SE = 0.35, t(172) = 2.17, p = .031). These results suggest that men with high IC scores who are induced to have a competitive motivation perceived that the negatively branded t-shirt associated with a dominant posture (M = 5.78) more accurately represented their true self and their feelings at the event as opposed to men with low IC scores who are induced to have a competitive motivation (M = 2.60, see Table 3 for means). This provides further support to our account that men with a chronically high (but not low) desire for IC indicated a higher degree of agreement that the negatively valenced branding represents their true feelings, making them more willing to pay for negative branding in consumer apparel (B = 0.15, SE = 0.05, 95% CI: [0.06, 0.27]). In the next and final experiment, we ruled out another alternative explanation, masculinity. Bosson and Michniewicz (2013) shows that masculinity is conceptually orthogonal to dominance or status striving, hence we manipulate the concepts of masculinity versus dominance independently.

8 | EXPERIMENT 4

In this final experiment, we ruled out the alternative explanation of masculinity (Hypothesis 5) by priming masculinity versus dominance independently. Masculinity is precisely about expressing gender identity and eschewing feminine attributes ("increasing the distance" from what is feminine, e.g., choosing a grooming style that increases the gender identity distance between themselves and females), without necessarily striving for dominance or status (Bosson & Michniewicz, 2013). Thus, it is possible to have masculine but nondominant concepts (e.g., *Village People* showing prominent mustaches, beards, and Adam's apple in the classically masculine music video "YMCA") because mustaches, beards, neckties, and Adam's apple increase the distance between the male consumer and feminine identity. In contrast, it is possible to express dominance *without increasing* the distance between the male consumer and feminine identity, by presenting oneself with nonmasculine but dominant concepts (e.g. David Bowie, Boy George, RuPaul, Dennis Rodman dressed in drag). It is even possible to express dominance while decreasing the distance from feminine identity, by presenting oneself with a feminine but dominant concept (e.g., a Dominatrix, which is prototypically a "femme" [not butch] female with highly feminine features, such as red lipstick and a classically female body shape, who dominates another person).

We predicted a 3-way interaction, such that men induced with a competitive motivation and have a high desire for IC would increase their preference for negative branding after they are primed with dominance concepts, but not after they are primed with masculinity concepts. When they are primed with dominance concepts, men competing with other men should increase their

TABLE 3 Results of 3-way interaction on the follow-up measure in Experiment 3

Intrasexual competition	Motivation	Posture	Means
10th percentile (2.00)	Neutral	Nondominant	4.11
10th percentile (2.00)	Competitive	Nondominant	2.80
10th percentile (2.00)	Neutral	Dominant	3.40
10th percentile (2.00)	Competitive	Dominant	2.60
25th percentile (2.42)	Neutral	Nondominant	4.04
25th percentile (2.42)	Competitive	Nondominant	3.05
25th percentile (2.42)	Neutral	Dominant	3.55
25th percentile (2.42)	Competitive	Dominant	2.92
50th percentile (3.42)	Neutral	Nondominant	3.87
50th percentile (3.42)	Competitive	Nondominant	3.64
50th percentile (3.42)	Neutral	Dominant	3.91
50th percentile (3.42)	Competitive	Dominant	3.68
75th percentile (4.83)	Neutral	Nondominant	3.63
75th percentile (4.83)	Competitive	Nondominant	4.49
75th percentile (4.83)	Neutral	Dominant	4.43
75th percentile (4.83)	Competitive	Dominant	4.76
90th percentile (6.17)	Neutral	Nondominant	3.41
90th percentile (6.17)	Competitive	Nondominant	5.29
90th percentile (6.17)	Neutral	Dominant	4.91
90th percentile (6.17)	Competitive	Dominant	5.78

Note: Intrasexual competition scores at 10th percentile = 2.00 out of 9, 25th percentile = 2.42 out of 9, 50th percentile = 3.42 out of 9, 75th percentile = 4.83 out of 9, and 90th percentile = 6.17 out of 9.

desire to send dominance signals, and hence increase their preference for negative branding. In contrast, this effect would not be observed among men with a low psychobiological desire for IC, because they have a chronically low desire to compete with rivals. We tested this interaction.

8.1 | Method

8.1.1 | Participants and design

We recruited 200 male participants who reside in the United States from MTurk in exchange for $0.40 each. Using similar exclusion criteria as in the previous experiments, we excluded 13 participants who had reported a homosexual orientation, yielding 187 heterosexual male participants in the main analysis. Participants were 20–76 years old (M_{age} = 38.02, *SD* = 11.87). The overall design of the study was a 2 (motivation: neutral vs. competitive) × 2 (priming: masculinity vs. dominance) × 2 (IC: low vs. high) where the first two factors being manipulated were between-subjects and the third factor was an individual differences measure.

8.1.2 | Procedure

After participants indicated their gender and age, we primed them with either masculinity or dominance concepts using a sentence unscrambling task (Srull & Wyer, 1979). Participants in the dominance condition were asked to solve five sentences that prime high dominance, but contain no information regarding masculinity (or is clearly feminine), by using either nonmasculine or female concepts such as a "dominatrix," which is clearly female, or animals with no gender information (i.e., The dominatrix coerces the submissive; The killer whale intimidates the shark; The dominant Bonobo overpowers the challenger; The dominance of the Lemur strikes fear in subordinates; and The hungry octopus dominates the prey) whereas participants in the masculinity condition were asked to solve five sentences that prime high masculinity (increases the desire to enlarge the gender identity distance, Bosson & Michniewicz, 2013), but contain no information regarding the level of dominance (i.e., Willie is very masculine; Stefan wears a mustache; Bubba wears a necktie; Rory shaves his beard with a shaving cream; He scratches his Adam's apple).

After the sentence unscrambling task (Srull & Wyer, 1979), participants read a scenario that manipulated motivation, after which they imagined attending a gathering, and indicated their willingness to pay on the 12-point (Rucker & Galinsky, 2008) scale for the negatively branded product: "Assume that the retail price of a leather jacket with the word "Python" is $100. How much would you be willing to pay for it?" (1 = *10% of the retail price*, 12 = *120% of the retail price*). Participants then answered the follow-up question on the degree to which they feel that the jacket represents themselves as per Experiment 3. Then, we asked them to indicate the degree to which they felt competitive (Fiske, Cuddy, Glick, & Xu, 2002): "If the people described in the scenario get special breaks, this is likely to make things more difficult for people like me," and "Resources that go to the people described in the scenario are likely to take away from the resources of people like me" (1 = *strongly disagree*, 9 = *strongly agree*; *r* = .78). Finally, participants completed a manipulation check for motivation (*r* = .79), a manipulation check for priming (e.g., "the sentence features dominance concepts;" vs "the sentence features masculine concepts"), and the 12-item Intrasexual Competitiveness Scale (Buunk & Fisher, 2009; α = .86).

8.2 | Results and discussion

8.2.1 | Manipulation checks

Results showed that men induced to have a motivation to compete (*M* = 7.45, *SD* = 1.67) showed a higher desire to compete compared to those under neutral motivation (*M* = 4.46, *SD* = 2.47, *t*(185) = 9.75, *p* < .001). Also, men in the dominance priming condition (*M* = 8.03 *SD* = 1.40) perceived that the sentences featured more dominant concepts compared to those in the masculine priming condition (*M* = 6.15, *SD* = 2.24, *F*(1,185) = 45.80, *p* < .001). Similarly, men in the masculinity priming condition (*M* = 7.23, *SD* = 1.83) perceived that the sentences featured more masculine concepts compared to participants in the dominance priming condition (*M* = 6.09, *SD* = 2.38, *F*(1, 185) = 13.51, *p* < .001). Hence, the manipulation to generate relatively masculine vs. relatively dominant concepts was successful.

8.2.2 | Willingness to pay

We ran a regression on the willingness to pay for negative branding measure as a function of motivation (neutral = 0, competitive = 1), priming (masculinity prime = 0, dominance prime = 1), IC, and all interactions. We also included covariates for participant's age and relationship status as we did in previous experiments. The regression model was statistically significant (R^2 = 0.11, *F*(9, 177) = 2.40, *p* = .014). Supporting Hypothesis 5, results revealed a significant 3-way interaction (*B* = 1.60, *SE* = 0.66, *t*(177) = 2.43, *p* = .016), along with significant effects of priming (*B* = 4.54, *SE* = 1.95, *t*(177) = 2.33, *p* = .021) and IC (*B* = 1.02, *SE* = 0.32, *t*(177) = 3.16, *p* = .002), and a marginally significant effect of motivation (*B* = 3.75, *SE* = 1.95, *t*(177) = 1.92, *p* = .056). No other effects or interactions were significant. To explore whether IC moderated the 2-way interaction (motivation × type of concept primed), we conducted a floodlight analysis (Spiller, Fitzsimons, Lynch, & McClelland, 2013). The floodlight analysis revealed two regions of significance at high IC scores above 7.01 out of 9 (B_{JN} = 4.33, *SE* = 2.19, *t* = 1.97, *p* = .05) and at IC scores below 2.61 out of 9 (B_{JN} = −2.72, *SE* = 1.38, *t* = −1.97, *p* = .05, see Figure 4a,b).

Decomposing the 2-way interaction at IC scores 5.92 out of 9 (or at 90th percentile) revealed a marginally significant effect

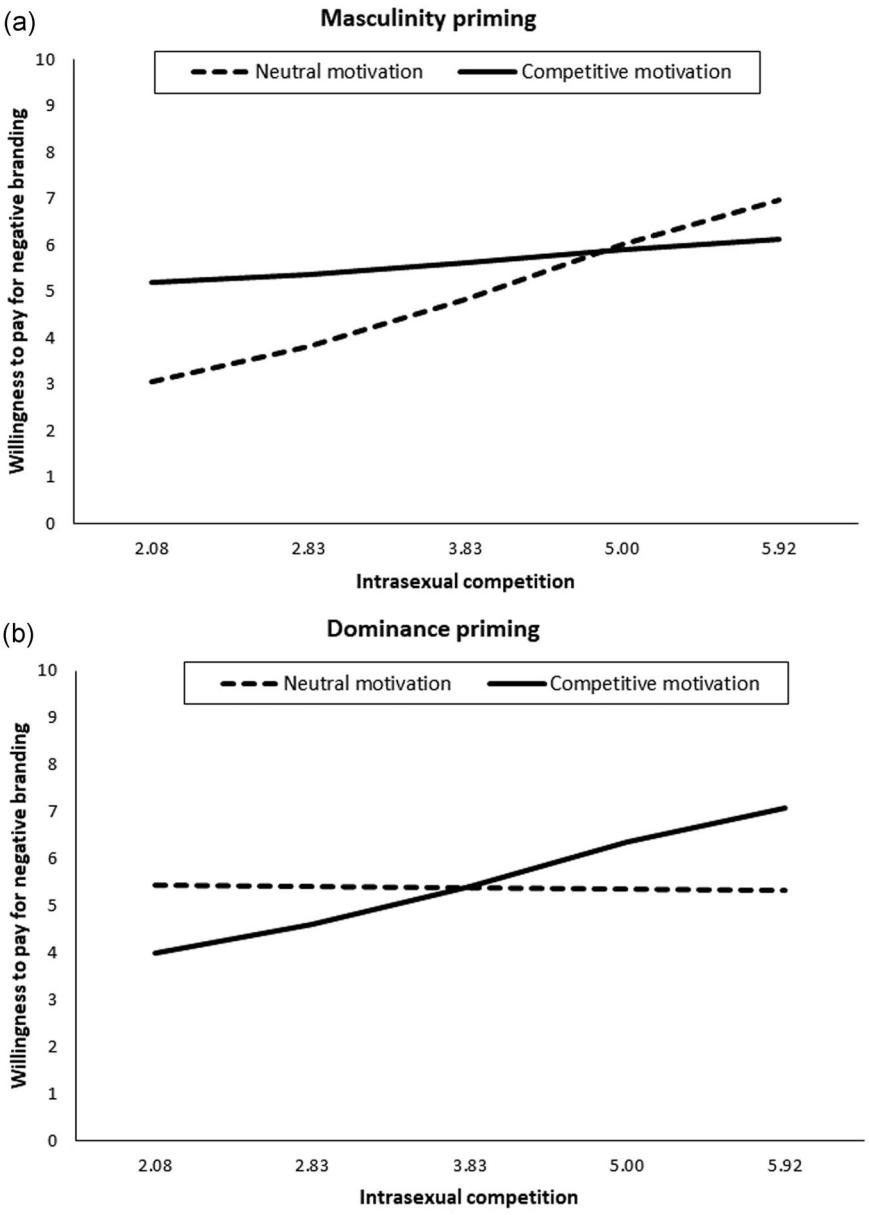

FIGURE 4 (a) Results illustrate the effect of motivation x individual differences in desire for IC scores on willingness to pay for a negative brand when participants are primed with masculinity (Experiment 4). The Johnson-Neyman points are significant at IC = 2.61 out of 9 (p = .05) and IC = 7.01 out of 9 (p = .05). Lines depict means at 10th, 25th, 50th, 75th, and 90th percentiles of the IC scores. (b) Results illustrate the effect of motivation × individual differences in desire for IC scores on willingness to pay for a negative brand when participants are primed with dominance (Experiment 4). The Johnson-Neyman points are significant at IC = 2.61 out of 9 (p = .05) and IC = 7.01 out of 9 (p = .05). Lines depict means at 10th, 25th, 50th, 75th, and 90th percentiles of IC scores. IC, intrasexual competition

(B_{JN} = 2.58, SE = 1.59, t = 1.63, p = .10), such that inducing a competitive motivation was likely to increase men's willingness to pay for negative branding after they are primed with dominance concepts compared to neutral motivation ($M_{competitive}$ = 7.08 vs. $M_{neutral}$ = 5.34). In contrast, inducing a competitive motivation was likely to decrease men's willingness to pay for negative branding when primed with masculinity concepts compared to a neutral motivation ($M_{competitive}$ = 6.14 vs. $M_{neutral}$ = 6.97). This pattern of results was reversed at IC scores 2.08 out of 9 (or at 10th percentile; B_{JN} = −3.57, SE = 1.64, t = −2.18, p = .031), such that inducing a competitive motivation significantly decreased men's willingness to pay for negative branding after they are primed with dominance concepts compared to those under neutral motivation, possibly reflecting low IC males' fear of backlash should they use negative branding in response to competition against more dominant rivals ($M_{competitive}$ = 4.01 vs. $M_{neutral}$ = 5.44). This pattern of results supports Hypotheses 5a and 5b.

8.2.3 | Additional analyses

We tested whether "desire to be competitive" mediated the 3-way interaction on willingness to pay for negative branding using PROCESS Model 11 (Hayes, 2013) with 5,000 bootstrap samples. Results revealed significant conditional indirect effects of motivation (X) and priming (Mod_1) on willingness to pay for negative branding (Y) via desire to be competitive (Med) at values of propensity for IC (Mod_2) as indicated by an index of a two-moderator moderated mediation (B = 0.24, SE = 0.16, 95% CI: [0.03, 0.69]). The indirect effect of motivation on willingness to

pay for negative branding was significant when dominance was primed and the participant has a high individual difference desire for IC (e.g., IC scores 5.92 out of 9, or at 90th percentile), suggesting that men with a high desire for IC, when induced to have a competitive (vs. neutral) motivation, had an especially high desire to be competitive, which in turn, increased their willingness to pay for negative branding (95% CI = 0.07, 1.23; see Table 4). However, the indirect effect became nonsignificant when participants were primed with masculinity concepts and the participant had a high individual difference desire for IC (e.g., IC scores 5.92 out of 9, or at 90th percentile), suggesting that men with a high desire for IC, when primed with masculinity but not dominance, had a similarly low (dormant) desire to be competitive as participants under a neutral motivation, which in turn, decreased their willingness to pay for negative branding (95% CI = −0.44, 0.48).

Finally, a 3-way interaction on the follow up measure did not show a 3-way interaction ($B = -0.09$, $SE = 0.57$, $t(177) = -0.16$, $p = .87$), but means were higher than the midpoint of the nine-point scale due to the priming of concepts (see Table 5), suggesting that all participants believed that the product they chose to wear to the gathering *represented themselves* and their true feelings at the event. In sum, our four experiments showed that a competitive motivation induced men to compete with other men, which increased their desire to appear dominant (but not when rivals are perceived to be nonthreats), and hence preferred negative branding. We provided nuance to the conceptual account by ruling out alternative explanations of desire to be unique, desire to be cool, perceived popularity and masculinity as mechanisms that underpin consumer preference for negative branding.

TABLE 5 Results of 3-way interaction on the follow-up measure in Experiment 4

Intrasexual competition	Motivation	Priming	Means
10th percentile (2.08)	Neutral	Masculinity	5.65
10th percentile (2.08)	Competitive	Masculinity	5.85
10th percentile (2.08)	Neutral	Dominance	5.10
10th percentile (2.08)	Competitive	Dominance	6.09
25th percentile (2.83)	Neutral	Masculinity	5.72
25th percentile (2.83)	Competitive	Masculinity	5.96
25th percentile (2.83)	Neutral	Dominance	5.39
25th percentile (2.83)	Competitive	Dominance	6.35
50th percentile (3.83)	Neutral	Masculinity	5.81
50th percentile (3.83)	Competitive	Masculinity	6.10
50th percentile (3.83)	Neutral	Dominance	5.77
50th percentile (3.83)	Competitive	Dominance	6.69
75th percentile (5.00)	Neutral	Masculinity	5.92
75th percentile (5.00)	Competitive	Masculinity	6.27
75th percentile (5.00)	Neutral	Dominance	6.22
75th percentile (5.00)	Competitive	Dominance	7.08
90th percentile (5.92)	Neutral	Masculinity	6.01
90th percentile (5.92)	Competitive	Masculinity	6.40
90th percentile (5.92)	Neutral	Dominance	6.57
90th percentile (5.92)	Competitive	Dominance	7.40

Note: Intrasexual competition scores at 10th percentile = 2.08 out of 9, 25th percentile = 2.83 out of 9, 50th percentile = 3.83 out of 9, 75th percentile = 5.00 out of 9, and 90th percentile = 5.92 out of 9.

TABLE 4 Results of conditional indirect effect of motivation and priming on willingness to pay for negative branding through desire to be competitive at values of intrasexual competition in Experiment 4

Mediator	Intrasexual competition	Priming	*B*	*SE*	95% CI
Desire to be competitive	10th percentile (2.08)	Masculinity	1.32	0.53	0.41, 2.50
Desire to be competitive	25th percentile (2.83)	Masculinity	1.06	0.43	0.33, 2.03
Desire to be competitive	50th percentile (3.83)	Masculinity	0.72	0.30	0.21. 1.41
Desire to be competitive	75th percentile (5.00)	Masculinity	0.33	0.21	0.03, 0.88
Desire to be competitive	90th percentile (5.92)	Masculinity	0.02	0.23	−0.44, 0.48
Desire to be competitive	10th percentile (2.08)	Dominance	0.83	0.42	0.19, 1.81
Desire to be competitive	25th percentile (2.83)	Dominance	0.76	0.36	0.18, 1.61
Desire to be competitive	50th percentile (3.83)	Dominance	0.67	0.31	0.19, 1.41
Desire to be competitive	75th percentile (5.00)	Dominance	0.56	0.28	0.15, 1.28
Desire to be competitive	90th percentile (5.92)	Dominance	0.47	0.28	0.07, 1.23

Note: Intrasexual competition scores at 10th percentile = 2.08 out of 9, 25th percentile =2.83 out of 9, 50th percentile = 3.83 out of 9, 75th percentile = 5.00 out of 9, and 90th percentile = 5.92 out of 9. Indirect effect is significant when confidence interval does not exclude zero.

9 | GENERAL DISCUSSION

We offer a novel "dominance signaling via negative branding" perspective by synthesizing evolutionary psychology theory with consumer literature. We extend these findings and identify products that elicit negative affect and avoidance from rivals in an energy-efficient manner ("negative branding"). Across one pilot study and four experiments, we have shown that negatively valenced words are automatically and nonconsciously associated with dominance in memory networks, and identified conditions under which males would prefer negative branding and a desire to elicit negative affect (such as fear) from conspecifics and elicit avoidant behavior from other male rivals. When male consumers are induced into a cognitive mode of competition, a preference for negative branding is activated, and it helps consumers be perceived as more alpha or alpha-like, akin to the dominance signaling behavior of primates in the classical animal literature (De Waal & Waal, 2007). Eliciting negative affect and avoidance is helpful under these conditions because successful attempts to dissuade rivals from mounting a challenge helps the male retain mating opportunities, territory, or valued resources (Fox, 1969).

9.1 | Theoretical contributions

Our findings bridge branding and evolutionary psychology literatures by demonstrating that male consumers send dominance signals via negative branding as a device to send the signal. We propose a novel psychological mechanism underpinning choice for negative brands and the corresponding practical application in the domain of consumer research: men competing with other men show aggression around other men (Griskevicius et al., 2009), with a key difference: Whereas Griskevicius et al. (2009)'s demonstrated outcome of "injurious loud noises" has limited ecological validity in marketing, "negative branding" is ecologically widespread in the marketplace (e.g., "Affliction," "Monster" brands) and is amenable to marketing actions that increase sales. We extend Griskevicius et al.'s (2009) findings and demonstrate that products can be used as a tool that signals threat. As evidenced by the results of our IAT, we demonstrate that negatively valenced words are nonconsciously associated with dominance concepts, which is why consumers prefer negatively valenced brands ("Brutal"), rather than positively valenced brands ("Champion"), when they are induced to compete, even if both valence types could signal dominance from a strictly definitional perspective (i.e., a Champion dominates rivals). The evolutionary underpinnings of these patterns of choice for negative versus positive brands are revealed by the fact that only male consumers (and not female consumers) choose to represent themselves with negatively valenced branding when induced to compete. This suggests that the nonconscious associations between negative valence and dominance concepts drives IC among males, but mate selection among females, as alluded to but not yet tested by Buunk (2017). In other words, hormonal changes resulting from a motivation to compete causes male consumers to choose negative branding to elicit avoidance from rivals, whereas female consumers view negative branding as a diagnostic cue to identify which males are more dominant, and which males may have had higher exposure to prenatal testosterone and thus lead to healthier offspring (Archer, 1988).

Our findings also contribute to the branding literature as well as suggest implications for the conditioning literature (Sweldens et al., 2010) by identifying the conditions under which marketers might do better by pairing their brand logos and stimuli with negative, rather than positive, stimuli. Under specific consumer contexts, pairing a marketer's logo or branding stimuli with negatively valenced words or images can elicit consumer preference, not repulsion, as previously assumed in the literature (Stuart et al., 1990). However, the insight is that conditioning with negative concepts should lead to positive evaluative responses toward the brand only when the participants are in a cognitive state of competition, whether the state is induced in that particular moment through priming (Experiments 1–4 in this study), or because these participants are chronically in a state of competition (e.g., High IC males, Buunk & Fisher, 2009). Inner city African Americans, for example, are hypothesized to be in a chronic state of competition (Mazur, 2016). Finally, our findings contribute to the literatures on the psychology of mating strategies, social psychology in general, consumer behavior, and the conspicuous consumption of prestige goods. Previous research has shown that individuals send prestige signals via affectively positive, luxury "status symbols" to communicate high income and high socioeconomic class when competing for potential mates or guarding their mates (Griskevicius et al., 2009; Sundie et al., 2011; Wang & Griskevicius, 2014). In contrast, the current research identifies a new repellant, avoidance-based mechanism that individuals use when under a competitive motivation (unrelated to luxury or prestige) to communicate dominance but *not* high income or socioeconomic class (and perhaps even signal low socioeconomic class; see Mazur, 2016), a mechanism that we share with primates and mammals in ethological history.

9.2 | Marketing implications

The findings have marketing implications with regard to targeting specific consumer segments. For example, negative brands are most likely to be successful when they are targeted at demographic or psychographic segments that are chronically in a cognitive mode for IC (e.g., teenage males, athletic apparel consumers, "jocks," consumers of combat sports related apparel, rockers, and countries with high male-to-female ratio; young African Americans as suggested by Mazur, 2016). Hence, it is probably not a coincidence that brands such as Affliction™, Mildew™, Urban Decay™, Depression™, Garbage™, and Gash™ use both words and visual imagery that are negatively valenced, are most successful with the inner city, teenage, and young adult consumer segments as they elicit avoidance from rivals while they navigate their environment.

The findings in our IAT study and four experiments validate the negative branding strategy employed by many apparel and fashion brands and taste makers, which, at first glance, appears risky because it elicits an automatic negative affective response (Bradley & Lang, 1999) that may prevent consumer approach to the brand and subsequent purchase, akin to a person who self-presents negatively in social interactions and repels most people (Farkas & Anderson, 1976), preventing them from attracting allies. Indeed, many of the signaling phenomena (Berger & Heath, 2007) appear to be dominance signaling through "dominance goods," rather than prestige signaling through prestige goods. For instance, inexpensive cars (e.g., an old Buick) with extremely large wheels in inner cities (hence low prestige but high dominance), deliberately loud engine noises from American muscle cars that are nonfunctional—these are some examples of instruments that consumers use to signal their high dominance, without signaling high prestige. In fact, the product design and marketing departments of Dodge and Chevrolet openly admit that their engines are deliberately engineered to be unnecessarily loud—beyond the actual fuel combustion that is taking place. In addition, special exhaust pipes amplify, rather than attenuate, the noise coming out of exhaust systems in these automobiles. Conceptually, affective valence is likely not the only dimension by which individuals can signal dominance.

9.3 | Limitations and future directions

There are two limitations of this study that need to be acknowledged. First, our experiments were scenario based. We used scenarios because this method is commonly used and well established in both consumer and evolutionary psychology research (Griskevicius et al., 2009; Griskevicius et al., 2010; Hennighausen et al., 2016; Sundie et al., 2011). Hence, we adopted well-established scenarios from Griskevicius et al. (2010) in Experiments 1–2 and slightly modified scenarios from Hennighausen et al. (2016) in Experiments 3–4 to equate both conditions with the same context (work-related context). Furthermore, we used scenarios because scenarios have higher internal validity by controlling for extraneous factors, and thus increasing confidence in the interpretation of the pattern of results. It has been argued that scenario-based experiments have acceptable ecological validity when the scenarios are realistically described and easy to imagine (Gershoff & Koehler, 2011). Following these guidelines, we pretested our scenarios where we measured how realistic, believable, and easy to imagine the scenario was (Chen et al., 2014), and these items should approximately capture the extent to which the scenarios will translate to ecologically valid interpretations. Future research could replicate our findings in the field.

Another limitation in this study is that the current experiments investigate contexts in which the consumer perceives the brand or stimulus as an expression or self-representation of himself or herself (Berger & Heath, 2007; Sundie et al., 2011). Product categories such as fashion apparel (e.g., Affliction, Depression), cosmetics (e.g., Urban Decay, Mildew), and personal care (e.g., Poison) lend themselves to individuals naturally perceiving the brand as an instrument for signaling (Berger & Heath, 2007). It is unclear whether this effect will generalize to brand choice processes that are mainly about private consumption. Nevertheless, we do observe negatively valenced brands in product categories that are not ostensibly used for social signaling (e.g., Knife cooking oil). Future research should investigate the mechanisms underpinning preference for negative imagery when the product category is not ostensibly a signaling instrument, perhaps through a mechanism of "displaced aggression" toward inanimate objects (Miller, Pedersen, Earleywine, & Pollock, 2003).

Another idea for future research could be to investigate the conditions for negative branding resulting from each discrete negative emotion (fear vs. disgust) would be fruitful (Frijda, 1986). For example, might consumers who perceive a lack of relative resources or strength prefer disgust-based negative brands such as "Garbage" instead of fear-based negative brands such as "Affliction?" In the animal kingdom, some species prefer disgust-based strategies when the animal perceives a low probability of success in using dominance signals that are fear-based (Darwin, 1859), so identifying the precipitating conditions for discretely specifiable negative branding strategies in a human analogue would be insightful. In some instances, the right strategy might be to *rot and repel*, rather than petrify and pulverize, intrasexual rivals.

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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REFERENCES

Archer, J. (1988). *The behaviowal biology of aggression*. Cambridge: Cambridge University Press.

Archer, J. (2006). Testosterone and human aggression: An evaluation of the challenge hypothesis. *Neuroscience and Biobehavioral Reviews*, *30*(3), 319–345. https://doi.org/10.1016/j.neubiorev.2004.12.007

Archer, J. (2009). Does sexual selection explain human sex differences in aggression? *Behavioral and Brain Sciences*, *32*(3-4), 249–266. https://doi.org/10.1017/S0140525X09990951

Berger, J., & Heath, C. (2007). Where consumers diverge from others: Identity signaling and product domains. *Journal of Consumer Research*, *34*(2), 121–134. https://doi.org/10.1086/519142

Bosson, J. K., & Michniewicz, K. S. (2013). Gender dichotomization at the level of ingroup identity: What it is, and why men use it more than

women. *Journal of Personality and Social Psychology*, *105*(3), 425–442. https://doi.org/10.1037/a0033126

Bradley, M. M., & Lang, P. J. (1999). Affective norms for English words (ANEW): Instruction manual and affective ratings. Technical report C-1, the Center for Research in Psychophysiology, University of Florida.

Buss, D. M., & Shackelford, T. K. (1997). From vigilance to violence: Mate retention tactics in married couples. *Journal of Personality and Social Psychology*, *72*(2), 346–361. https://doi.org/10.1037//0022-3514.72.2.346

Buunk, A. P. (2017). There is more: Intrasexual competitiveness, physical dominance, and intrasexual collaboration. *Behavioral and Brain Sciences*, *40*, e23. https://doi.org/10.1017/S0140525X16000443

Buunk, A. P., & Fisher, M. (2009). Individual differences in intrasexual competition. *Journal of Evolutionary Psychology*, *7*(1), 37–48. https://doi.org/10.1556/JEP.7.2009.1.5

Carpenter, T. P., Pogacar, R., Pullig, C., Kouril, M., Aguilar, S., LaBouff, J., & Chakroff, A. (2019). Survey-software implicit association tests: A methodological and empirical analysis. *Behavior Research Methods*, *51*(5), 2194–2208. https://doi.org/10.31234/osf.io/hgy3z

Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: Nonconscious goal priming reproduces effects of explicit task instructions. *Journal of Personality and Social Psychology*, *71*(3), 464–478. https://doi.org/10.1037/0022-3514.71.3.464

Chen, C. Y., Mathur, P., & Maheswaran, D. (2014). The effects of country-related affect on product evaluations. *Journal of Consumer Research*, *41*(4), 1033–1046. https://doi.org/10.1086/678194

Cheng, J. T., Tracy, J. L., & Henrich, J. (2010). Pride, personality, and the evolutionary foundations of human social status. *Evolution and Human Behavior*, *31*, 334–347. https://doi.org/10.1016/j.evolhumbehav.2010.02.004

Cheng, J. T., Tracy, J. L., Foulsham, T., Kingstone, A., & Henrich, J. (2013). Two ways to the top: Evidence that dominance and prestige are distinct yet viable avenues to social rank and influence. *Journal of Personality and Social Psychology*, *104*(1), 103–125. https://doi.org/10.1037/a0030398

Darwin, C. (1859). *On the origin of species by means of natural selection, or the preservation of favored races in the struggle for life*. London: John Murray.

De Waal, F., & Waal, F. B. (2007). *Chimpanzee politics: Power and sex among apes*. Baltimore, MD: Johns Hopkins University Press.

Duclos, R., Wan, E. W., & Jiang, Y. (2013). Show me the honey! Effects of social exclusion on financial risk-taking. *Journal of Consumer Research*, *40*(1), 122–135. https://doi.org/10.1086/668900

Farkas, A. J., & Anderson, N. H. (1976). Integration theory and inoculation theory as explanations of the "paper tiger" effect. *The Journal of Social Psychology*, *98*(2), 253–268. https://doi.org/10.1080/00224545.1976.9923396

Fiske, S. T., Cuddy, A. J., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*(6), 878–902. https://doi.org/10.1037/0022-3514.82.6.878

Fox, M. W. (1969). The anatomy of aggression and its ritualization in canidae: A developmental and comparative study. *Behaviour*, *35*(3-4), 242–258. https://doi.org/10.1163/156853969X00224

Frijda, N. H. (1986). *The emotions: Studies in emotion and social interaction*. New York, NY: Cambridge University Press.

Gershoff, A. D., & Koehler, J. J. (2011). Safety first? The role of emotion in safety product betrayal aversion. *Journal of Consumer Research*, *38*(1), 140–150. https://doi.org/10.1086/658883

Gorn, G. J. (1982). The effects of music in advertising on choice behavior: A classical conditioning approach. *Journal of Marketing*, *46*(1), 94–101. https://doi.org/10.2307/1251163

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, *85*(2), 197–216. https://doi.org/10.1037/0022-3514.85.2.197

Griskevicius, V., Tybur, J. M., Gangestad, S. W., Perea, E. F., Shapiro, J. R., & Kenrick, D. T. (2009). Aggress to impress: Hostility as an evolved context-dependent strategy. *Journal of Personality and Social Psychology*, *96*(5), 980–994. https://doi.org/10.1037/a0013907

Griskevicius, V., Tybur, J. M., & Van den Bergh, B. (2010). Going green to be seen: Status, reputation, and conspicuous conservation. *Journal of Personality and Social Psychology*, *98*(3), 392–404. https://doi.org/10.1037/a0017346

Guest, D., Estes, Z., Gibbert, M., & Mazursky, D. (2016). Brand suicide? Memory and liking of negative brand names. *PLoS One*, *11*(3): e0151628. https://doi.org/10.1371/journal.pone.0151628

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.

Hennighausen, C., Hudders, L., Lange, B. P., & Fink, H. (2016). What if the rival drives a Porsche? Luxury car spending as a costly signal in male intrasexual competition. *Evolutionary Psychology*, *14*(4), 1–13. https://doi.org/10.1177/1474704916678217

Henrich, J., & Gil-White, F. J. (2001). The evolution of prestige: Freely conferred deference as a mechanism for enhancing the benefits of cultural transmission. *Evolution and Human Behavior*, *22*(3), 165–196. https://doi.org/10.1016/S1090-5138(00)00071-4

Holland, E., Wolf, E. B., Looser, C., & Cuddy, A. (2017). Visual attention to powerful postures: People avert their gaze from nonverbal dominance displays. *Journal of Experimental Social Psychology*, *68*, 60–67. https://doi.org/10.1016/j.jesp.2016.05.001

Laidre, M. E., & Johnstone, R. A. (2013). Animal signals. *Current Biology*, *23*(18), R829–R833. https://doi.org/10.1016/j.cub.2013.07.070

Lang, P., Bradley, M., & Cuthbert, B. (2008). International affective picture system (IAPS): Affective ratings of pictures. Technical Report A-8.

Manolică, A., Mititiuc, C. E., & Roman, T. (2018). Negative brand names. *Review of Economic and Business Studies*, *11*(1), 31–44. https://doi.org/10.1515/rebs-2018-0063

Mazur, A., & Booth, A. (1998). Testosterone and dominance in men. *Behavioral and Brain Sciences*, *21*(3), 353–363. https://doi.org/10.1017/S0140525X98001228

Mazur, A. (2016). Testosterone is high among young black males with little education. *Frontiers in Sociology*, *1*(1), https://doi.org/10.3389/fsoc.2016.00001

McQuarrie, E. F., Miller, J., & Phillips, B. J. (2013). The megaphone effect: Taste and audience in fashion blogging. *Journal of Consumer Research*, *40*(1), 136–158. https://doi.org/10.1086/669042

Miller, N., Pedersen, W., Earleywine, M., & Pollock, V. (2003). A theoretical model for triggered displaced aggression. *Personality and Social Psychology Review*, *7*(1), 75–97. https://doi.org/10.1207/S15327957PSPR0701_5

Otterbring, T., Ringler, C., Sirianni, N. J., & Gustafsson, A. (2018). The Abercrombie & Fitch effect: The impact of physical dominance on male customers' status-signaling consumption. *Journal of Marketing Research*, *55*(1), 69–79. https://doi.org/10.1509/jmr.15.0247

Plutchik, R. (1980). A general psychoevolutionary theory of emotion. In R. Plutchik & H. Kellerman (Eds.), *Emotion: Theory, research, and experience, Theories of emotion* (1, pp. 3–33). New York: Academic Press.

Polo, P., Fernandez, A., Muñoz-Reyes, J. A., Dufey, M., & Buunk, A. P. (2018). Intrasexual competition and height in adolescents and adults. *Evolutionary Psychology*, *16*(1):1474704917749172. https://doi.org/10.1177/1474704917749172

Rolls, E. (2014). Emotion and decision-making explained: A précis. *Cortex*, *59*, 185–193. https://doi.org/10.1016/j.cortex.2014.01.020

Rozin, P., Hormes, J. M., Faith, M. S., & Wansink, B. (2012). Is meat male? A quantitative multimethod framework to establish metaphoric relationships. *Journal of Consumer Research*, *39*(3), 629–643. https://doi.org/10.1086/664970

Rucker, D. D., & Galinsky, A. D. (2008). Desire to acquire: Powerlessness and compensatory consumption. *Journal of Consumer Research*, *35*(2), 257–267. https://doi.org/10.1086/588569

Spiller, S. A., Fitzsimons, G. J., Lynch, J. G., Jr, & McClelland, G. H. (2013). Spotlights, floodlights, and the magic number zero: Simple effects tests in moderated regression. *Journal of Marketing Research*, *50*(2), 277–288. https://doi.org/10.1509/jmr.12.0420

Srull, T. K., & Wyer, R. S. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social Psychology*, *37*(10), 1660–1672. https://doi.org/10.1037/0022-3514.37.10.1660

Stuart, E. W., Shimp, T. A., & Engle, R. W. (1987). Classical conditioning of consumer attitudes: Four experiments in an advertising context. *Journal of Consumer Research*, *14*(3), 334–349. https://doi.org/10.1086/209117

Stuart, E. W., Shimp, T. A., & Engle, R. W. (1990). Classical conditioning of negative attitudes. In: M. E. Goldberg, G. Gorn & R. W. Pollay (Eds.), *Advances in consumer research: Proceedings of the association for consumer research conference* (17, pp, 536–540).

Sundie, J. M., Kenrick, D. T., Griskevicius, V., Tybur, J. M., Vohs, K. D., & Beal, D. J. (2011). Peacocks, porsches, and thorstein veblen: Conspicuous consumption as a sexual signaling system. *Journal of Personality and Social Psychology*, *100*(4), 664–680. https://doi.org/10.1037/a0021669

Sweldens, S., Van Osselaer, S. M., & Janiszewski, C. (2010). Evaluative conditioning procedures and the resilience of conditioned brand attitudes. *Journal of Consumer Research*, *37*(3), 473–489. https://doi.org/10.1086/653656

Trivers, R. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual Selection and the descent of man* (pp. 136–179). Chicago: Aldine-Atherton.

van Lawick-Goodall, J. (1968). The behaviour of free-living chimpanzees in the gombe stream reserve. *Animal Behaviour Monographs*, *1*(3), 161–311. https://doi.org/10.1016/S0066-1856(68)80003-2

Wang, Y., & Griskevicius, V. (2014). Conspicuous consumption, relationships, and rivals: Women's luxury products as signals to other women. *Journal of Consumer Research*, *40*(5), 834–854. https://doi.org/10.1086/673256

Warren, C., & Campbell, M. C. (2014). What makes things cool? How autonomy influences perceived coolness. *Journal of Consumer Research*, *41*(2), 543–563. https://doi.org/10.1086/676680

Warren, C., Batra, R., Loureiro, S. M. C., & Bagozzi, R. P. (2019). Brand coolness. *Journal of Marketing*, *83*(5), 36–56. https://doi.org/10.1177/0022242919857698

Williams, M. J., & Tiedens, L. Z. (2016). The subtle suspension of backlash: A meta-analysis of penalties for women's implicit and explicit dominance behavior. *Psychological Bulletin*, *142*(2), 165–197. https://doi.org/10.1037/bul0000039

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