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Original Article

The Rival Wears Prada: Luxury Consumption as a Female Competition Strategy

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Abstract: Previous studies on luxury consumption demonstrated that men spend large sums of money on luxury brands to signal their mate value to women and, thus, increase their reproductive success. Although women also spend copious amounts of money on luxuries, research focusing on women's motives for luxury consumption is rather scarce. Relying on costly signaling and intrasexual competition theory, the goal of the current study was to test whether female intrasexual competition in a mate attraction context triggers women's spending on luxuries. The results of the first experiment reveal that an intrasexual competition context enhances women's preferences for attractiveness enhancing, but not for non-attractiveness related luxuries such as a smartphone. This finding indicates that women may use luxury consumption as a self-promotion strategy during within-sex competitions, as these luxuries improve their advantages against same-sex rivals for mates. A follow-up study shows that compared to women who do not consume luxuries, women who do so are perceived as more attractive, flirty, young, ambitious, sexy, and less loyal, mature and smart by other women. These results suggest that luxury consumption may provide information about a women's willingness to engage in sex, as well as her views about other women, and consequently, her success in intrasexual competitions.

Keywords: women, intrasexual competition, luxury consumption, sex differences, status

Introduction

Many individuals spend their money excessively on luxury brands – brands that are perceived as highly extraordinary (i.e., exhibit excellent quality or aesthetically appealing design) and highly exclusive (i.e., are associated with premium price or rarity). However, past research on luxury consumption has primarily focused on why men are universally attracted to showy luxury brands, such as Ferrari cars (e.g., Janssens et al., 2011). In particular, researchers tried to understand why men spend more money on premium priced brands that offer no additional utilitarian benefits compared to their cheaper counterparts. However, women are also willing to spend large sums of money on conspicuous luxuries, such as Louboutin shoes, Louis Vuitton purses, or Armani dresses (Chao and Schor, 1998; Stokburger-Sauer and Teichmann, 2011). Indeed, recent figures show that women spend on average \$100 billion every year on luxury brands (Lemonides, 2010). However, despite these figures, research on the motives for female luxury consumption is rather scarce (Hudders, 2012; Wang and Griskevicius, 2014).

This study builds on evolutionary psychological research that has addressed material consumption patterns (Colarelli and Dettmann, 2003; Miller, 2009; Saad and Gill, 2000). Evolutionary psychology provides a deeper understanding of why a particular behavior happens by offering an ultimate rather than a proximate explanation for human behavior (for a review, see Saad and Gill, 2000). Therefore, when applied to consumer goods, the argument is that these goods function as signals of desirable traits and bring status to the consumer (Miller, 2009). Accordingly, displays of luxury brands may function as signals of underlying mate value by increasing the attractiveness of the person who owns the goods (Griskevicius et al., 2007; Miller, 2009; Nelissen and Meijers, 2011; Saad and Vongas, 2009; Sundie et al., 2011; Wang and Griskevicius, 2014).

Although research within this evolutionary paradigm has shown that men ostentatiously spend their money on luxury brands to signal their mate value to women, it remains unclear which motives trigger women's spending on luxury brands. Recently, Wang and Griskevicius (2014) found that women use luxury consumption as a mate retention strategy. More specifically, their studies indicate that women display luxuries to deter same sex others who are perceived as a threat towards a romantic relationship. According to their findings, luxuries can signal the devotion of a romantic partner, so displaying luxuries indirectly signals the strength of the relationship. The current study further tests the assumption that women may purchase luxury brands to impress other women by exploring whether luxury consumption functions as a signal to deter rivals in mate acquisition situations. Accordingly, this study is an empirical investigation as to whether intrasexual competition for mates triggers women's spending on luxuries. The goal of this research is to explore why women are universally attracted to luxury brands, but also provide relevant information about consumption as an indirect competition technique within female-female relationships.

Evolutionary roots of luxury consumption

Evolutionary theory has been used to suggest that human preferences for luxury brands relate to costly signaling, in that ownership of luxury brands signals desirable traits to others (Griskevicius et al., 2007; Miller, 2009; Nelissen and Meijers, 2011; Saad, 2007, 2011; Saad and Vongas, 2009; Sundie et al., 2011). Therefore, costly signaling theory may

explain why luxury brands are so widely desired. Displays of luxury brands may function as signals of underlying mate value, by increasing the attractiveness of the person who owns the good (Sundie et al., 2011).

According to costly signaling theory, signals communicate underlying characteristics of an organism that are not easily perceivable and are linked to fitness-relevant qualities. It is important to note that individuals are not necessarily consciously aware of the motives that underlie this signaling behavior (Miller, 2009). Signals can be both physical and behavioral traits, and they must vary in quality, intensity, or degree between signalers (Saad and Vongas, 2009; Zahavi, 1975). Moreover, these signals need to be easily perceivable by receivers, so that receivers can readily distinguish between individuals who do and do not possess the underlying traits (Miller, 2000). Furthermore, it is important that the sender reliably signals the underlying characteristic and that the receiver does not ignore the signal (Bliege Bird and Smith, 2005; Bliege Bird, Smith, and Bird, 2001).

A signal is reliable when it is more costly to display for a low fitness individual compared to a high fitness individual, which implies that there is a strong relationship between a signal and its cost. When the signal is easily produced and displayed with low cost, such that every animal can do so equally well, the signal loses its value because it can no longer reveal differences in the genetic quality of individuals. For example, only a healthy lion can afford to grow a large mane because these large manes have a tremendous impact on his survival chances (i.e., suffering from heat stress and parasites). Zahavi (1975) referred to this phenomenon as the “handicap principle,” because the signal involves the display of a wasteful quality (i.e., the spending of energy on a seemingly frivolous feature at the expense of characteristics more directly linked to health), but also handicaps the sender because it has a detrimental impact on his or her survival chances.

The consumption of luxury brands may function as a costly signal of an individual’s fitness value. Individuals may use these brands to flaunt or emphasize their physical attractiveness, intelligence, aggressiveness, social status, and other capacities to gather resources, thereby enhancing their reproductive success (Miller, 2000; Sundie et al., 2011). It is a signal that reveals quality by wasting resources, such that it handicaps the sender so that resources cannot be allocated to other activities (Miller, 1999).

Men may display luxury goods as signals to attract potential mates, perhaps more than to impress or intimidate other men. Men may use these signals to indicate their ability to accrue resources to women, who are typically the choosier sex when it comes to mating. As such, a man driving a Ferrari may not only impress other men and consequently gain status, he is also perceived as attractive by women (e.g., Dunn and Searle, 2010; Shuler and McCord, 2010) and may increase his likelihood of finding a mate. Indeed, Griskevicius et al. (2007) showed that priming men in a mating context (i.e., by showing them pictures of attractive women and suggesting that they would go on a date with one of them) increased men’s spending on conspicuous items but not on inconspicuous, basic necessities (e.g., household cleaning products or bedroom alarm clocks). This finding implies that signaling theory may explain the conspicuous consumption of luxury brands, at least for men, as they can function as a signal of underlying mate value. However, it remains unclear why women widely desire luxuries. Sundie et al. (2011), for instance, found that whereas sexually

unrestricted men spent more money on conspicuous consumption in a mating context, sexually unrestricted women did not, indicating that women's motives for luxury consumption may not be to attract mates. In addition, women driving a luxury car (Dunn and Searle, 2010) or standing in a luxury apartment (Dunn and Hill, 2014) were not perceived as more attractive by men.

Female luxury consumption

Women react differently toward luxury brands than men. Stokburger-Sauer and Teichmann (2011), for instance, showed that compared to men, women have a more positive attitude toward luxury brands and believe that luxury brands provide more hedonic value, status, and uniqueness than non-luxury brands. In addition, women spend copious amounts of money on luxuries, such as extravagant trips, designer clothes, and expensive cosmetics (Chao and Schor, 1998; Stokburger-Sauer and Teichmann, 2011), and engage in conspicuous consumption, especially when it signals helpfulness and benevolence (e.g., pay a dinner for a homeless family; Griskevicius et al., 2007). However, in evolutionary terms, females mainly gain from displaying these signals when they need to compete against other females for resources and mates, or when males are selective about their mates (Miller, 2009). In humans, men are particularly selective when seeking a mate for a long-term relationship (Geary et al., 2004), which implies that women should also engage in the signaling process. However, Griskevicius et al. (2007) and Sundie et al. (2011) found women did not spend more money on conspicuous luxuries in a mating context compared to a neutral context, and Sundie et al. (2011), Dunn and Searle (2010), and Dunn and Hill (2014) found that men's judgments of a woman's attractiveness were independent from her conspicuous consumption patterns. Instead, a more plausible explanation for women's conspicuous consumption behavior is female intrasexual competition for status (Miller, 2009; Wang and Griskevicius, 2014).

Intrasexual competition and female aggression

Intrasexual competition occurs when individuals compete to gain access to limited resources that they do not want to share (Cox and Fisher, 2008). This involves same-sex competition for access to potential and desirable mates (Rosvall, 2011) and competition to retain a mate (Schmitt and Buss, 1996). Men and women differ in the characteristics they pay attention to when selecting potential mates (Buss, 1999; Miller, 2000). Previous studies, for instance, showed that women tend to look for reliable men with high social status and good financial prospects, such that they mate with men who are both able and willing to invest their time and resources into a relationship (Buss, 1999). These preferences are adaptive because they enable women to select a mate who will help them ensure the survival of their children, thereby increasing their inclusive fitness. Men, on the other hand, highly value youthfulness and physical attractiveness in women. These preferences evolved because these observable features signal fertility and reproductive potential, which are characteristics that can maximize the reproductive success of men via increased numbers of healthy children (Buss, 1999). The number of mates who possess these desirable characteristics is limited, so individuals need to compete with each other to get access to these scarce "resources." Even though male intrasexual competition has

received more attention from evolutionary psychologists (e.g., Geary, 1998), among humans, both sexes engage in such behavior. Men compete with each other to obtain young and fertile female partners, and women compete with each other to obtain high status male partners (Buss, 1989).

One particular strategy for intrasexual competition is to rule out competitors (Benenson, 2009). Whereas men frequently use physical aggression (Buss, 1988), women instead often opt to use verbal communication as a means of indirect aggression (e.g., by gossip; see De Backer, Nelissen, and Fisher, 2007). Women, more than men, use indirect aggression strategies to compete with each other, mainly because they are typically the foremost caregivers to children and their harm or death would be more costly to any dependents (Campbell, 2004). However, both men and women derogate competitors and also attempt to increase their own mate value or reputation by promoting positive attributes relative to those of rivals (Buss, 1988; Schmitt, 2002). Recent studies show that self-promotion strategies are more often used than competitor derogation, especially by women (Fisher, Cox, and Gordon, 2009). In addition, this strategy is particularly interesting to investigate in a luxury context, because it is not necessary to know the identity of the rivals, whereas such knowledge is needed for competitor derogation, since the latter is aimed at a specific individual.

In the current paper, we predict that women may use luxury brands for self-promotion in female-female competition. However, it has been unclear which underlying qualities women may signal to other women through luxury consumption, aside from the devotion of a romantic partner (Wang and Griskevicius, 2014). In the following, we suggest two possible kinds of signals that both provide advantages in female-female competitions. First, luxuries may be used by women to flaunt their mate value to other women by signaling their wealth and status. In this respect, a study by Kenrick et al. (2001) showed that wealth is an indicator of mate value, as it influences the desirability of both men and women (although there appears to be a ceiling effect, as a rising income contributes less to mate value for high income individuals than for lower income individuals). Women may use luxuries to signal their wealth and status to other women in order to intimidate them and prevent them from seducing potential mates. In this respect, and similar to Wang and Griskevicius' (2014) findings that flaunting luxuries is an effective strategy for women to deter rivals who are a potential threat to one's romantic relationship, it may be a strategy to pre-guard potential mates. This strategy may be especially used in the long-term mating market, as women who are looking for long-term relationships have a disposition to look for men with a high social status and good financial prospects (Buss, 1999). Intrasexual competition by flaunting luxuries may provide women with benefits in their search for high-status partners.

Thus, if ownership of luxury goods signals one's high mate value, these goods could be used to indicate to potential rivals that one is likely to win during a situation of intrasexual competition. Moreover, this signal would enable women to be indirect in their competition; they are not engaging in a direct confrontation. Instead, luxury goods allow them to demonstrate their mate value indirectly via self-promotion, with the expectation that rivals may refrain from competing. Thus, women should attend to, and desire to, own luxury goods as a way to increase their relative status for intrasexual competition.

According to costly signaling theory, this desire should not be apparent for less prestigious, inconspicuous goods. Likewise, if the desire for luxury goods is related to intrasexual competition, it should be especially noticeable in mate attraction contexts. Based on the above it can be expected that women will have an increased desire for luxury goods that signal wealth and status when they are confronted with a situation of intrasexual competition, as compared to a noncompetitive situation (Hypothesis 1). We do not expect these effects to occur for non-luxury goods.

However, when using self-promotion, an alternative strategy of women is that they try to enhance their appearance relative to that of rivals (Fisher et al., 2009). Women may enhance their appearance by advertising qualities valued by men, such as beauty and youthfulness. In this respect, for all forms of intrasexual competition, studies have shown that men display their qualities and attack other men to gain access to resources, whereas women focus on features of physical attractiveness (Buss, 1988). As Buss (1988) suggests, women compete by wearing fashionable or sexy clothing, wearing cosmetics, and acting promiscuously, all of which are more effective when performed by women than men. Studies have shown that women are especially prone to display such behavior near ovulation (e.g., Durante, Li, and Haselton, 2008; Saad and Stenstrom, 2012). As such, it may provide women with an advantage in finding a highly fertile and attractive male, and thus offer benefits in the short-term mating market. In addition, it has recently been shown that near ovulation, women generally spend more money, and this spending is more impulsive and excessive (Pine and Fletcher, 2011). However, what specifically is purchased remains unknown.

When signaling improves appearance, it is highly likely that not all luxury goods can be effectively used for self-promotion. For example, it may be most advantageous for women to purchase luxury cosmetics in an effort to improve their appearance. There are two reasons for this prediction. First, if one is going to engage in costly signaling, the signal should transmit information that is difficult to fake. Physical attractiveness can be altered, but it is challenging to radically alter one's appearance for it to be considered vastly improved. That said, cosmetics and clothing may be used to accentuate youthfulness, which increases evaluations of women's attractiveness (Etcoff, Stock, Haley, Vickey, and House, 2011). For instance, accentuating the redness of lips increases the attractiveness of women (and not of men; Stephen and McKeegan, 2009). In general, spending money on luxury clothes may be more rewarding for women, especially in the short-term mating market, than spending money on, for example, a car. Thus, in contrast to Hypothesis 1, we expect that if women use luxury products to signal their mate value to other women, it will be luxury products that actually enhance their physical attractiveness rather than products that merely signal access to resources (Hypothesis 2).

Experiment 1: Female Luxury Consumption and Intrasexual Competition

To test whether a female intrasexual competition context triggers women's luxury consumption, women's preferences for luxury versus non-luxury products were assessed following a prime for competitive vs. noncompetitive motives. In addition, as we expect product type to moderate the relationships, we distinguished between attractiveness

enhancing and non-attractiveness enhancing products.

Materials and Methods

Participants

The goal was to have a sample of women in the fertile life stage (i.e., under 50 years of age) and that contained a diverse range of women, especially in terms of their income and educational level. A survey was carried out online using Qualtrics software. A link to the survey was posted on websites (e.g., of women's magazines) and sent to women by e-mail. This study was carried out in full compliance with the University's guidelines on the conduct of research involving human subjects. All respondents were informed about the general aims, their anonymity was guaranteed and all gave full consent. Two hundred seventy-one women started the survey; however, 34 women did not complete the survey and 42 women were older than 50. These women were excluded from further analyses. This left us with 195 (heterosexual) female respondents (Mean \pm SE age = 27.21 \pm 0.50, N = 195). These participants were Flemish women, living in the Dutch-speaking part of Belgium. No ethnic or racial diversity appeared in the sample. In terms of education, 150 women were highly educated (i.e., high school or university degree), whereas 45 participants were less educated (i.e., primary or secondary education). As for income level, 75 women had a net monthly income of less than 1500 Euros, 69 women had a net monthly income between 1500 and 3000 Euros, and 45 women had a net monthly income of more than 3000 Euros. The respondents were randomly assigned to one of the conditions by the computer and there were no significant income differences between the luxury ($\chi^2(2) = 4.11$, $p = 0.13$), context ($\chi^2(2) = 3.42$, $p = 0.18$), or product ($\chi^2(2) = 1.27$, $p = 0.53$) conditions.

Materials and procedure

A 2 (context: intrasexual competition vs. noncompetitive) by 2 (luxuries: luxuries vs. non-luxuries) by 2 (product type: dress vs. smartphone) between subjects factorial design was used to test the hypotheses. Scenarios were used to manipulate the three independent variables. Fictional scenarios are a useful and common research tool in evolutionary psychological research (see Wilson and O'Gorman, 2003). The procedure used in this study was similar to that used by Griskevicius et al. (2007). First, all respondents were exposed to four pictures and a scenario that primed them to think about either an intrasexual competition context or a noncompetitive context. Respondents were instructed to look at the pictures and carefully read the scenario (described below). Then respondents had to indicate the amount of competitive feelings felt at this moment, which was the manipulation check to ensure the effectiveness of the prime. After this, and presented as an unrelated task, they received a description of a product (i.e., either a luxury or non-luxury item that was either a smartphone or a dress, both of which were described as luxury or non-luxury items). Respondents were asked to read the scenario and to imagine they saw the described product in a fashion store. Afterwards, they indicated how much they liked this product. Note that attitudes rather than actual purchase behavior was measured; participants were asked to indicate their attitude toward the product (on a seven-

point Likert-type scale ranging from 1 = very negative to 7 = very positive). This distinction is important, as sexual selection pressures presumably cause men and women to be different in what they desire; their actual behavior might be alike, but what they fantasize about (i.e., desire) may differ (Symons, 1979). As manipulation checks, we measured the perceived luxuriousness and expensiveness of the product with two items on a seven-point Likert-type scale. To conclude, respondents provided demographic data: age, income, and educational level.

Respondents in the intrasexual competition context were exposed to four pictures of attractive women, and they indicated which of the women was the most attractive. Next, they read a scenario and were instructed to keep that woman in mind. In the scenario, participants were told to imagine that they went to a class reunion where they met an attractive, smart, funny, intelligent man with an engaging personality. However, the woman they saw in the picture also showed interest in this man and she initiated a conversation with him when the participant went to get a drink. The scenario ended when the participant came back with the drinks and tried to join the conversation. Respondents in the noncompetitive context were exposed to four pictures of landscapes and they indicated which of the landscapes was most attractive. Next, they read a scenario, keeping that landscape in mind. In the scenario, participants were told to imagine that they walked through the landscape they chose and enjoyed the environment, weather and views.

Respondents in the luxury condition had to read a description of a luxury product, either attractiveness enhancing (i.e., a dress), or neutral (i.e., a smartphone). Two product categories—mobile phones and clothing—were chosen that are highly relevant to women and that can be used to enhance physical attractiveness (i.e., dress can accentuate feminine curves) or not (i.e., smartphone cannot directly enhance physical attractiveness). The luxuriousness of the product was manipulated by using various adjectives related to luxury (see Hudders, Pandelaere and Vyncke, 2013). This is the scenario used for the dress:

Imagine you see a little black dress in a store. It is a very expensive but beautiful dress. The dress is a unique piece of an exclusive clothing line. It has an excellent quality and is only available in a luxurious clothing store. When wearing this dress you will feel luxurious.

Respondents in the non-luxury condition received an identical scenario, but with adjectives describing a non-luxury product: “cheap,” “mass-produced,” “lower quality,” “non-exclusive,” and “widely available in a budget fashion chain”. Similar scenarios are used for the smartphone.

Results

Manipulation check

A three-way Multivariate Analysis of Variance (MANOVA) was conducted with luxury, context, and product type conditions as independent variables and the amount of competitive feelings, perceived luxuriousness, and expensiveness as dependent variables to check the manipulations.

First, the results showed a main effect of context condition on the amount of competitive feelings, $F[1,187] = 121.32$, $p < 0.001$, $\eta_p^2 = 0.39$. In line with expectations,

women in the competitive context felt more competitive ($M \pm SE = 4.39 \pm 0.17$) compared to women in the noncompetitive context ($M \pm SE = 2.25 \pm 0.18$). All other main and interaction effects on these two dependent variables were non-significant, all F s[1,187] < 1.83, p s > 0.17. These results indicate a successful manipulation of intrasexual competition within the sample.

Next, the results revealed a main effect of luxury condition on perceived luxuriousness, $F[1,187] = 145.76$, $p < 0.001$, $\eta_p^2 = 0.44$, and on perceived expensiveness, $F[1,187] = 133.49$, $p < 0.001$; $\eta_p^2 = 0.42$. Women in the luxury condition perceived the product as more luxurious ($M \pm SE = 5.03 \pm 0.14$) and expensive ($M \pm SE = 4.94 \pm 0.13$) than women in the non-luxury condition ($M \pm SE_{\text{luxuriousness}} = 2.67 \pm 0.14$; $M \pm SE_{\text{expensiveness}} = 2.73 \pm 0.14$), showing a successful manipulation of the luxury condition. In addition, there was a significant three-way interaction effect between luxury, context, and product type condition on perceived luxuriousness, $F[1,187] = 3.71$, $p = 0.056$, $\eta_p^2 = 0.02$, and on perceived expensiveness, $F[1,187] = 4.44$, $p = 0.036$, $\eta_p^2 = 0.02$. In particular, women perceived the *luxury smartphone* as more luxurious in the competitive ($M \pm SE = 5.63 \pm 0.19$) than in the non-competitive context ($M \pm SE = 3.42 \pm 0.26$, $t[41] = 7.07$, $p < 0.001$), and more expensive when in the competitive ($M \pm SE = 5.08 \pm 0.32$) than in the non-competitive context ($M \pm SE = 4.05 \pm 0.22$, $t[41] = 2.49$, $p = 0.017$). In addition, the results showed that women perceived the *luxury dress* as more luxurious when in the competitive ($M \pm SE = 5.92 \pm 0.24$) than in the non-competitive context ($M \pm SE = 5.15 \pm 0.29$, $t[57] = 1.98$, $p = 0.053$), but not more expensive in the competitive versus non-competitive context, $t[52] = 0.87$, $p = 0.39$. Women in the competitive and non-competitive context did not differ from each other for the perceived luxuriousness and expensiveness of the non-luxury dress and smartphone, all t s < 0.67, p s > 0.50. To control for the effects that these differences between competitive and noncompetitive conditions in perceived luxuriousness and expensiveness of the luxury dress and smartphone may have on product attitudes, we included these variables as covariates in the analyses.

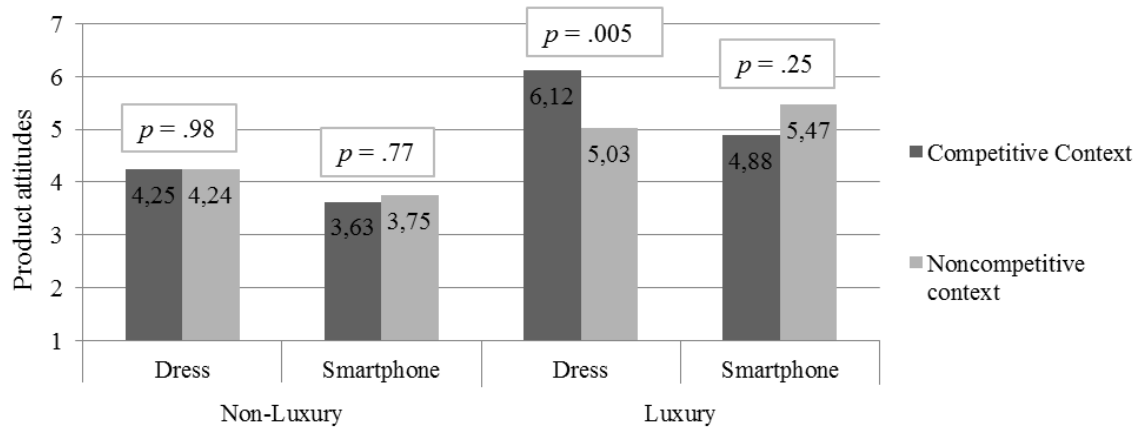
Female competition triggers preferences for luxuries

A three-way Analysis of Variance (ANOVA) model was constructed with luxury, context and product type conditions as the independent variables and product attitudes as the dependent variable, in order to investigate if female competition triggers preferences for luxuries and to check if this effect is further moderated by product type. There were significant main effects of luxury condition ($F[1,187] = 46.68$, $p < 0.001$, $\eta_p^2 = 0.20$) and product type ($F[1,187] = 5.38$, $p = 0.021$, $\eta_p^2 = 0.03$), but not of context ($F[1,187] = 0.20$, $p = 0.65$) on product attitudes. In addition, there was a significant interaction effect between context and product type ($F[1,187] = 4.87$, $p = 0.029$, $\eta_p^2 = 0.03$). More specifically, respondents in the intrasexual competition context had a more positive attitude toward the dress ($M \pm SE = 5.18 \pm 0.20$) than the smartphone ($M \pm SE = 4.25 \pm 0.21$, $t[96] = 3.13$, $p < 0.01$), whereas women's attitudes toward the dress ($M \pm SE = 4.64 \pm 0.19$) did not differ from their attitudes toward the smartphone ($M \pm SE = 4.61 \pm 0.23$, $t[69] = 0.29$, $p = 0.78$) in the noncompetitive context. The interaction effects between luxury condition and product type ($F[1,187] = 0.15$, $p = 0.70$) and between luxury condition and context ($F[1,187] = 0.15$, $p = 0.70$) were non-significant.

0.53, $p = 0.47$) were not significant. The latter contradicts the first hypothesis.

However, results revealed a marginally significant three-way interaction effect, $F[1,187] = 3.53$, $p = 0.062$, $\eta_p^2 = 0.02$, favoring Hypothesis 2. In particular, a competitive context triggered respondents' preferences for luxury dresses ($t[57] = 2.93$, $p = 0.005$), but not for luxury smartphones ($t[30] = 1.17$, $p = 0.25$; see figure 1). The differences between competitive and non-competitive contexts were not significant for non-luxury products. When including perceived luxuriousness and expensiveness as covariates in the three-way ANOVA, the three-way interaction effect enlarges and the p -value decreases, $F[1, 185] = 7.85$, $p = 0.007$, $\eta_p^2 = 0.04$. To conclude, a multiple mediation analysis using the PROCESS macro of Hayes (2013) shows that luxuriousness ($c' = 0.19$, $SE = 0.11$, 95% CI [0.0086, 0.4670]), but not expensiveness ($c' = 0.004$, $SE = 0.03$, 95% CI [-0.0285; 0.0982]) mediates the impact of context condition on product attitudes. These results confirm the second hypothesis.

Figure 1. Women's level of desire for luxuries



Note. Interaction effect between context (competitive or noncompetitive), luxury (luxury or non-luxury), and product type (dress or smartphone), with the dependent variable of mean rating of product attitudes.

Discussion

The results of this study show that a context involving intrasexual competition may trigger women's preferences for luxury dresses, but not for luxury smartphones. The question remains, however, as to what exactly these women communicate to each other when displaying such luxury goods. Are women who display luxury items perceived to be more ambitious and, hence, more successful at competition? Perhaps the traits that are signaled by owning luxury goods align with men's mate preferences: In theory, the traits composing mate preference become the vehicles for intrasexual competition (Andersson, 1994). If so, are men's mate preferences related to female characteristics indicative of long-term (e.g., reliable, stable) or short-term (e.g., sexy, flirty) relationships? Thus, in order to understand what luxury goods signal to rivals, the goal in the second study was to measure

how women perceive other women who either spend or do not spend money on luxuries.

Experiment 2: Female Perceptions of Female Luxury Consumers

Materials and Methods

Participants

Similar to the procedure of the first study, an experimental survey study was carried out online using Qualtrics software. A link to the survey was posted on websites (e.g., of women's magazines) and sent to women by e-mail. This study was carried out in full compliance with the University's guidelines on the conduct of research involving human subjects. All respondents were informed about the general aims, their anonymity was guaranteed and all gave full consent. Two hundred seventy-nine women participated in this study; however, eight women older than 50 years were excluded from further analyses. This left 271 Flemish (i.e., Dutch-speaking part of Belgium, $\text{Mean} \pm \text{SE}_{\text{age}} = 22.40 \pm 0.28$) women who participated in this study. In terms of education, 146 women were highly educated (i.e., high school or university degree) and 125 women were less educated (i.e., primary or secondary education).

Materials and procedure

To investigate women's perceptions of other women who consume luxuries vs. non-luxuries, a 2 (product: luxuries vs. non-luxuries) by 2 (product type: attractiveness enhancing vs. neutral) between-subjects experimental design was used. Respondents were randomly assigned to one of the conditions by the computer. Respondents evaluated a woman displaying a luxury product or a non-luxury product for each of several traits. Two luxury products (i.e., an expensive evening dress and watch) and two non-luxury products (i.e., a cheap night cream and alarm clock) were integrated into the experimental design. The evening dress and the night cream were attractiveness enhancing products, whereas the watch and the alarm clock were neutral products.

In the experiment, respondents first read a scenario in which they were told that a woman, "Tine," leaves for a trip, and once she arrives, she realizes that she forgot product X. Therefore, she goes on a shopping trip and purchases product X (i.e., dress, watch, night cream, or alarm clock) for price Y (i.e., 300 Euro or 15 Euro). In the luxury condition, respondents were told that Tine decided to purchase a dress or a watch for 300 Euro. In the non-luxury condition, respondents were told that Tine decided to purchase an alarm clock or a night cream for 15 Euro. Next, respondents assessed Tine on various characteristics.

Respondents were first asked to indicate if Tine spent a great deal of money on the product and if they would spend similar amounts of money when purchasing that product (manipulation checks). These items were rated with a Likert-type scale ranging from 1 = very little/ far less to 7 = very much/much more. Next, they evaluated Tine on 13 traits (i.e., agreeable, attractive, youthful, sexy, flirty, loyal, talented, smart, mature, ambitious, passionate, rich, and wealthy) measuring six important dimensions of mate value: agreeableness, attractiveness, sexual willingness, intelligence, ambition, and status (Buss, 1989). They also indicated to what extent they might consider Tine as a potential friend and

as a potential rival. All of these items were rated with Likert-type scales ranging from 1 = not at all to 7 = very much. Finally, respondents provided demographic data (i.e., age, and educational level).

Results

Manipulation check

Respondents in the luxury condition agreed that the woman spent considerable money on the product ($M \pm SE = 6.23 \pm 0.08$), compared to respondents in the non-luxury condition ($M \pm SE = 4.18 \pm 0.12$, $t[220] = 14.68$, $p < 0.001$). Moreover, respondents in the luxury condition indicated that they would spend less money on the product than the woman ($M \pm SE = 1.42 \pm 0.06$), compared to respondents in the non-luxury condition ($M \pm SE = 2.68 \pm 0.12$, $t[178] = 9.63$, $p < 0.001$).

Personality perceptions

A MANOVA was created with the traits as dependent variables and product type as the between-subjects factor. The woman who consumed the luxury product was perceived differently by the respondents than when she consumed the non-luxury product, $F(15,255) = 15.27$, $p < 0.001$ (see Table 1). In particular, she was perceived as being more attractive ($F[1,269] = 12.99$, $p < 0.001$, $\eta_p^2 = 0.05$), sexier ($F[1,269] = 20.65$, $p < 0.001$, $\eta_p^2 = 0.07$), more flirty ($F[1,269] = 26.11$, $p < 0.001$, $\eta_p^2 = 0.09$), more youthful ($F[1,269] = 30.66$, $p < 0.001$, $\eta_p^2 = 0.10$), more ambitious ($F[1,269] = 11.59$, $p = 0.001$, $\eta_p^2 = 0.04$), richer ($F[1,269] = 161.75$, $p < .001$, $\eta_p^2 = .38$), wealthier ($F[1,269] = 88.38$, $p < 0.001$, $\eta_p^2 = 0.25$), less loyal ($F[1,269] = 4.69$, $p = 0.031$, $\eta_p^2 = 0.02$), less mature ($F[1,269] = 37.12$, $p < 0.001$, $\eta_p^2 = 0.12$), less smart ($F[1,269] = 11.24$, $p = 0.001$, $\eta_p^2 = 0.04$), and less likely to be a potential friend ($F[1,269] = 4.46$, $p = 0.036$, $\eta_p^2 = 0.02$). There were no significant differences between both conditions for agreeableness ($F[1,269] = 0.65$, $p = 0.42$), talented ($F[1,269] = 0.50$, $p = 0.48$), passionate ($F[1,269] = 0.07$, $p = 0.79$), and the degree to which one is considered a rival ($F[1,269] = 1.21$, $p = 0.27$).

In addition, a two-factor MANOVA analysis was conducted to investigate whether product type moderated these effects. The results only revealed significant interaction effects on youthfulness ($F[1, 267] = 23.02$, $p < 0.001$, $\eta_p^2 = 0.08$) and loyalty ($F[1, 267] = 4.92$, $p = 0.027$, $\eta_p^2 = 0.02$). The woman was perceived as more youthful in the luxury than in the non-luxury condition when she purchased the attractiveness enhancing product ($M_{luxury} = 5.21 \pm 0.13$; $M_{non-luxury} = 3.58 \pm 0.17$; $t[139] = -7.67$, $p < 0.001$), but not when she purchased the neutral product ($M_{luxury} = 4.68 \pm 0.15$; $M_{non-luxury} = 4.56 \pm 0.18$; $t[128] = -0.50$, $p = 0.62$). The woman was perceived as less loyal in the luxury than in the non-luxury condition, when she purchased the neutral product ($M_{luxury} = 3.31 \pm 0.12$; $M_{non-luxury} = 3.81 \pm 0.11$; $t[128] = 2.98$, $p = 0.003$), but not when she purchased the attractiveness enhancing products ($M_{luxury} = 3.48 \pm 0.09$; $M_{non-luxury} = 3.50 \pm 0.12$; $t[139] = 0.05$, $p = 0.96$). There was a marginally significant interaction effect on flirtiness ($F[1, 267] = 3.44$, $p = .065$, $\eta_p^2 = 0.01$), but results indicated that for both product categories the woman was perceived as more flirty in the luxury than in the non-luxury condition. All other interaction

effects were not significant, $F_s < 2.7$, $p_s > 0.10$.

Table 1. Perceptions of female luxury consumers

		Non-luxuries	Luxuries
Agreeableness	Agreeable	3.74	3.65
	Friend*	3.50	3.20
	Rival	3.06	3.25
Attractiveness	Sexy***	3.44	4.17
	Attractive***	3.73	4.25
	Youthful***	4.02	4.99
Sexual Willingness	Flirty***	3.57	4.43
	Loyal*	3.65	3.41
Intelligence	Mature***	3.93	3.01
	Smart***	3.55	3.13
	Talented	3.40	3.52
Ambition	Ambitious***	3.73	4.31
	Passionate	3.94	4.03
Status	Rich***	3.91	5.68
	Wealthy***	4.27	5.61

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

Discussion

In sum, the results of this second study revealed that women who consume luxuries are perceived as more attractive, ambitious, sexy, and of high status compared to when they consume non-luxuries. These characteristics may be useful in an intrasexual competition context, as luxuries may be perceived as signals of ambition, status, and sexiness, which are traits that also provide benefits by attracting desirable mates.

General Discussion

The current paper empirically tests the idea of Miller (2009), Sundie et al. (2011), and Wang and Griskevicius (2014), that women consume luxuries to impress other women. Whereas Wang and Griskevicius (2014) focused on the consumption of luxuries as a mate retention strategy, the current paper explored whether female intrasexual competition is a possible explanation for women's consumption behavior in a mate acquisition context. Both studies in this paper provide support for this possibility.

The results of the first study show that women in an intrasexual competition context appear to have a higher preference for luxuries as compared to women in a noncompetitive context, but only when these luxuries can accentuate a woman's attractiveness. These results suggest that female intrasexual competition triggers women's preferences for luxuries, but only for attractiveness enhancing products. In addition, an intrasexual competition context did not trigger women's preferences for non-luxuries. Together, these results suggest that women use consumption, and not simply spending behavior overall, as a tactic to increase their ability to compete with rivals. However, the current study only investigated two product categories, dresses and smartphones, so future research should replicate the study with other product categories in order to better generalize the results. The rejection of the first hypothesis, that intrasexual competition may trigger general preference for luxuries, may be explained by the fact that appearance-enhancing tactics are more effective in self-promotion contexts, whereas resource-related tactics are more effective in competitor derogation contexts (Schmitt, 2002). Future research should further explore the importance of both types of luxuries in both competitor derogation and self-promotion contexts. It is possible that women feel more attractive wearing a luxury dress, for example, which is consistent with the findings from the mediation analysis. Moreover, as we did not control for differences in quality perceptions, future studies should see whether women preferred the luxury dress to the non-luxury dress in the competition context because they think the former will make them look nicer. This is because differences in quality perceptions may also induce differences in perceptions of wearing comfort and how nice they would look while wearing the dress. In sum, these results contribute to the literature on intrasexual competition by providing evidence for the use of luxury consumption as an indirect self-promotion strategy in female-female relationships.

Using past research on the evolutionary roots of men's consumption of luxury goods, it is proposed that a similar (unconscious) motive drives women's behavior. Consuming luxury brands may provide both survival (e.g., better product-related performances; Amar, Ariely, Bar-Hillel, Carmon, and Ofir, 2011) and reproductive (e.g., status improvement or increased mate value) advantages for women. Although it has been previously shown that women who consume luxuries are not perceived as more attractive by men, doing so may provide several benefits for women in social interactions. Nelissen and Meijers (2011), for instance, show that individuals act more compliantly toward women who are wearing luxurious clothes. In general, it seems female luxury consumption may be triggered by various motives, and it remains unknown whether other, noncompetitive contexts may trigger female luxury consumption.

Whereas the first experiment provides further evidence for the evolutionary roots of women's luxury consumption, the second study specifically focused on women's perceptions of other women who consume luxuries. It was found that women perceive women who consume more luxuries as more ambitious, sexy, and flirty, and less loyal and mature. These traits may be related to following a short-term mating strategy and, consequently, luxury brands may be perceived by women as signals of willingness to engage in brief, primarily sexual encounters. Women might also benefit from displaying these traits for long-term relationships, at least when they want to initiate a relationship. Strategic Interference Theory (Haselton, Buss, Oubaid, and Angleitner 2005) predicts

women will overemphasize their willingness to have sex on first dates. Thus, it would be interesting to investigate if similar results are found for scenarios that focus on mate retention tactics rather than competition for access to new potential mates. In a mate retention context, it is predicted that committed women will be more fearful of women displaying luxuries (thus signaling a short-term mating strategy) compared to women who do not display luxuries.

It might also be interesting to investigate if spending money on luxuries signals risk-taking behavior. Studies have shown that both male and female risk-takers are highly desired for short-term, but not long-term, relationships (Basset and Moss, 2004). Perhaps women perceive other women who spend large sums of money as risk-takers and think they will be viewed as desirable mates. In addition, it remains possible that women use ownership of luxury goods to signal to potential mates that they are selective and prefer high status (i.e., wealthy) men. As such, a direction for future research is to explore whether women use luxury consumption to signal the minimum level of resources they expect from a partner, thereby excluding low-status men (Buss, 2003).

These findings may be interesting for marketing practitioners, as they can use primes related to intrasexual competition in their marketing strategies and advertisements to convince women to spend money on luxury items. Therefore, future research should focus on the effectiveness of depicting potentially competitive scenarios (e.g., two women posing near an attractive and seemingly wealthy man) in advertisements for luxury versus non-luxury brands.

Despite these contributions, there are some limitations of the current study. First, the study measured whether an intrasexual competition context triggered women's desire for luxuries, but did not investigate whether it also incited women to actually spend money on luxury goods. Future research is needed to explore whether intrasexual competition influences which luxuries women spend the most money on. Second, no data about the possible influence of women's fertility were available; perhaps normally cycling, fertile women consume luxury items due to increased competition for mates (e.g., Lens Driesmans, Pandelaere, and Janssens, 2011). In this respect, women's sociosexual orientation (long vs. short term mating strategy) should be taken into account.

This study represents one of the first attempts to explore the evolutionary roots of women's consumption patterns, particularly as they relate to ownership of luxury goods. It explored the possibility that women's intrasexual competition is related to the desire to own luxury goods, and found that women express a stronger desire to own attractiveness-enhancing luxury items when presented with a situation involving intrasexual competition for mates. This study also found that women who opt to purchase luxury items are perceived by other women as having distinct personality traits from those who do not, and specifically, these traits suggest a short-term mating strategy. This research may represent a beginning to a potentially new research area, and provides a novel way to explore the influence of various factors on women's intrasexual competition.

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References

- Amar, M., Ariely, D., Bar-Hillel, M., Carmon, Z., and Ofir, C. (2011). Brand names act like marketing placebos. *Discussion Paper 566 of the Center for the Study of Rationality*, 1-7.
- Andersson, M. (1994). *Sexual selection*. Princeton, NJ: Princeton University Press.
- Bassett, J. F., and Moss, B. (2004). Men and women prefer risk takers as romantic and nonromantic partners. *Current Research in Social Psychology*, 9, 133-144.
- Benenson, J. F. (2009). Dominating versus eliminating the competition: Sex differences in human intrasexual aggression. *Behavioral and Brain Sciences*, 32, 268-269.
- Bliege Bird, R., and Smith, E. A. (2005). Signaling theory, strategic interaction, and symbolic capital. *Current Anthropology*, 46, 221-249.
- Bliege Bird, R., Smith, E. A., and Bird, D. W. (2001). The hunting handicap: Costly signaling in male foraging strategies. *Behavioral Ecology and Sociobiology*, 50, 9-19.
- Buss, D. M. (1988). From vigilance to violence: Tactics of mate retention in American undergraduates. *Ethology and Sociobiology*, 9, 291-317.
- Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, 12, 1-49.
- Buss, D. M. (1999). *Evolutionary psychology: The new science of the mind*. Boston: Allyn and Bacon.
- Buss, D. M. (2003). *The evolution of desire: Strategies of human mating* (rev. ed.) New York: Basic Books.
- Campbell, A. (2004). Female competition: Causes, constraints, content and contexts. *Journal of Sex Research*, 41, 6-26.
- Chao, A., and Schor, J. B. (1998). Empirical tests of status consumption: Evidence from women's cosmetics. *Journal of Economic Psychology*, 19, 107-131.
- Colarelli, S. M., and Dettmann, J. R. (2003). Intuitive evolutionary perspectives in marketing practices. *Psychology and Marketing*, 20, 837-865.
- Cox, A., and Fisher, M. L. (2008). A framework for exploring intrasexual competition. *Journal of Social, Evolutionary and Cultural Psychology*, 2, 1-12.
- De Backer, C. J. S., Nelissen, M., and Fisher, M. L. (2007). Let's talk about sex: A study on the recall of gossip about potential mates and sexual rivals. *Sex Roles*, 56, 781-791.
- Dunn, M. J., and Hill, A. (2014). Manipulated luxury-apartment ownership enhances opposite-sex attraction in females but not males. *Journal of Evolutionary Psychology*, 12, 1-17.
- Dunn, M. J., and Searle, R. (2010). Effect of manipulated prestige-car ownership on both sex attractiveness ratings. *British Journal of Psychology*, 101, 69-80.
- Durante, K. M., Li, N. P., and Haselton, M. G. (2008). Changes in women's choice of dress across the ovulatory cycle: Naturalistic and laboratory task-based evidence. *Personality and Social Psychology Bulletin*, 34, 1451-1460.

- Etcoff, N. L., Stock, S., Haley, L. E., Vickery, S. A., and House, D. M. (2011). Cosmetics as a feature of the extended human phenotype: Modulation of the perception of biologically important facial signals. *PLoS ONE*, 6, e25656-e25656.
- Fisher, M., Cox, A., and Gordon, F. (2009). Deciding between competition derogation and self-promotion. *Journal of Evolutionary Psychology*, 7, 287-308.
- Geary, D. C. (1998). *Male, female: The evolution of human sex differences*. Washington, DC: American Psychological Association.
- Geary, D. C., Vigil, J., and Byrd-Craven, J. (2004). Evolution of human mate choice. *Journal of Sex Research*, 41, 27-42.
- Griskevicius, V., Tybur, J. M., Sundie, J. M., Cialdini, R. B., Miller, G. F., and Kenrick, D. T. (2007). Blatant benevolence and conspicuous consumption: When romantic motives elicit strategic costly signals. *Journal of Personality and Social Psychology*, 93, 85-102.
- Haselton, M. G., Buss, D. M., Oubaid, V., and Angleitner, A. (2005). Sex, lies, and strategic interference: The psychology of deception between the sexes. *Personality and Social Psychology Bulletin*, 31, 3-23.
- Hayes, A. F. (2013). *An introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- Hudders, L. (2012). Why the devil wears Prada: Consumers' purchase motives for luxury brands. *Journal of Brand Management*, 19, 609-622.
- Hudders, L., Pandelaere, M. and Vyncke, P. (2013). Consumer meaning making: The meaning of luxury brands in a democratized luxury world. *International Journal of Market Research*, 55, 69-90.
- Janssens, K., Pandelaere, M., Van den Bergh, B., Millet, K., Lens, I., and Roe, K. (2011). Can buy me love: Mate attraction goals lead to perceptual readiness for status products. *Journal of Experimental Social Psychology*, 47, 254-258.
- Kenrick, D. T., Sundie, J. M., Nicastle, L. D., and Stone, G. O. (2001). Can one ever be too wealthy or too chaste? Searching for nonlinearities in mate judgment. *Journal of Personality and Social Psychology*, 80, 462-471.
- Lemonides, D. (2010). Niche marketing: The spending power of women. Verve Marketing and Design. Retrieved from: <https://luxurysociety.com/articles/2010/02/niche-marketing-the-spending-power-of-women>.
- Lens, I., Driesmans, K., Pandelaere, M., and Janssens, K. (2011). Would male conspicuous consumption capture the female eye? Menstrual cycle effects on women's attention to status products. *Journal of Experimental Social Psychology*, 48, 346-349.
- Miller, G. F. (1999). Waste is good. *Prospect*, Feb., 18-23.
- Miller, G. (2000). Mental traits as fitness indicators: Expanding evolutionary psychology's adaptationism. *Annals of the New York Academy of Sciences*, 907, 62-74.
- Miller, G. F. (2009). *Spent: Sex, evolution, and consumer behavior*. New York: The Penguin Group.
- Nelissen, R. M. A., and Meijers, M. H. C. (2011). Social benefits of luxury brands as costly signals of wealth and status. *Evolution and Human Behavior*, 32, 343-355.
- Pine, K., and Fletcher, B. (2011). Women's spending behavior is menstrual-cycle sensitive. *Personality and Individual Differences*, 50, 74-80.

- Rosvall, K. A. (2011). Intrasexual competition in females: Evidence for sexual selection. *Behavioral Ecology*, 22, 1131-1140.
- Saad, G. (2007). *The evolutionary bases of consumption*. London: Lawrence Erlbaum Associates.
- Saad, G. (2011). *The consuming instinct: What juicy burgers, Ferraris, pornography, and gift giving reveal about human nature*. New York: Prometheus Books.
- Saad, G., and Gill, T. (2000). Applications of evolutionary psychology in marketing. *Psychology and Marketing*, 17, 1005-1034.
- Saad, G., and Stenstrom, E. (2012). Calories, beauty, and ovulation: The effects of the menstrual cycle on food and appearance-related consumption. *Journal of Consumer Psychology*, 22, 102-113.
- Saad, G., and Vongas, J. G. (2009). The effect of conspicuous consumption on men's testosterone levels. *Organizational Behavior and Human Decision Processes*, 110, 80-92.
- Schmitt, D. P. (2002). A meta-analysis of sex differences in romantic attraction: Do rating contexts moderate tactic effectiveness judgments? *British Journal of Social Psychology*, 41, 387-402.
- Schmitt, D. P., and Buss, D. M. (1996). Strategic self-promotion and competitor derogation: Sex and context effects on the perceived effectiveness of mate attraction tactics. *Journal of Personality and Social Psychology*, 70, 1185-1204.
- Shuler, G. A., and McCord, D. M. (2010). Determinants of male attractiveness: "Hotness" ratings as a function of perceived resources. *American Journal of Psychological Research*, 10, 10-23.
- Stephen, I. D., and McKeegan, A. M. (2009). Lip colour affects perceived sex typicality and attractiveness of human faces. *Perception*, 39, 1104-1110.
- Stokburger-Sauer, N. E., and Teichmann, K. (2011). Is luxury just a female thing? The role of gender in luxury brand consumption. *Journal of Business Research*, 66, 889-896.
- Sundie, J. M., Kenrick, D. T., Griskevicius, V., Tybur, J. M., Vohs, K. D., and Beal, D. J. (2011). Peacocks, porsches, and Thorstein Veblen: Conspicuous consumption as a sexual signaling system. *Journal of Personality and Social Psychology*, 100, 664-680.
- Symons, D. (1979). *The evolution of human sexuality*. New York: Oxford University Press.
- Wang, Y., and Griskevicius, V. (2014). Conspicuous consumption, relationships, and rivals: Women's luxury products as signals to other women. *Journal of Consumer Research*, 40, 834-854.
- Wilson, D. S., and O'Gorman, R. (2003). Emotions and actions associated with norm-breaking events. *Human Nature*, 14, 277-304.
- Zahavi, A. (1975). Mate selection: A selection for a handicap. *Journal of Theoretical Biology*, 53, 205-214.