

Attitudes toward ads portraying women in decorative roles and female competition: an evolutionary psychology perspective

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The portrayal of women in advertising is a prolific research topic and extant studies have emphasized the negative attitudes of female consumers toward stereotypic depictions of women in advertising in general. However, empirical evidence regarding female consumers' responses to specific ads depicting women in decorative roles is scarce and conflicting. Drawing on the principles of evolutionary psychology, the present paper proposes that women's attitudes toward such ads are underlied by the evolved context-sensitive mechanism of intrasexual competition. Relevant hypotheses are tested through two experimental studies. The findings indicate that decorative portrayals in advertising elicit more favorable attitudes when female consumers compete through a self-promotion strategy with regard to a competitor derogation one. Additionally, the temporal orientation of self-referencing during ad processing emerges as a moderator of the influence of the motivational state elicited by the medium context on attitudes.

Keywords: evolutionary psychology; female stereotypes; advertising; intrasexual competition

Introduction

Portrayals of women in advertising have long attracted researchers' interest. In particular, the depiction of women in advertising has raised societal concerns about the pressure put on women by idealized images of beauty (e.g. Bissell and Rusk 2010) and much has been said and written about the roles that advertisers prescribe to them (e.g. Debevec and Iyer 1986). Especially regarding the latter, a voluminous stream of research has focused on the examination of the phenomenon of gender stereotyping in advertising (for reviews, see Eisend 2010; Wolin 2003); it has been widely reported that female consumers disapprove of the way advertising generally represents women (e.g. Zimmerman and Dahlberg 2008). Yet, most studies on the topic have been descriptive in nature, with only limited focus on theoretical explanations of women's responses to actual ads that portray women in decorative roles with little if any relevance to the advertised product. The latter portrayals have been frequently considered to arise from preconceived notions about 'a woman's place' (cf. Courtney and Lockeretz 1971) and the media and advertising industries' reinforcement of patriarchal values (McDonagh and Prothero 1997). Contemporary advertisements, even those targeting a female audience, have not ceased to portray women in decorative roles (Taylor, Landreth, and Bang 2005), with what can be

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superficially considered as a blatant disregard of female consumers' indignation with the way they are depicted in advertising. However, only few empirical studies have supported the notion that women respond unfavorably to such portrayals (see Theodoridis et al. 2013). The present paper aims at addressing this apparent controversy by proposing that female responses to decorative depictions of women in advertisements are context-sensitive and can be explained via the evolved mechanism of intrasexual competition and presenting the results of two studies conducted to test the corresponding hypotheses.

Evolutionary psychology is a paradigm that seeks to account for cultural phenomena via the biological underpinnings of humans (Saad and Gill 2000); its principles can be used to explain several facets of human behavior, such as mating preferences, consumption of foods rich in salt or sugar, and fear of snakes through the identification of domain-specific psychological mechanisms which have evolved to respond to adaptive problems faced by the human species (Colarelli and Dettman 2003). As such, evolutionary psychology is not considered a sub-field of psychology by its proponents; rather, it is viewed as a meta-theoretical integrative perspective that integrates the field of psychology as a whole (Carmen et al. 2013; Duntley and Buss 2008). Thus, evolutionary psychology challenges what Tooby and Cosmides (1992, 23) refer to as the 'Standard Social Science Model,' i.e. the extant 'intellectual framework for the organization of psychology and the social sciences' which posits that human behavior is governed by 'general-purpose' and 'content-free' mechanisms, such as learning, reasoning and imitation (Cosmides and Tooby 1994, 54) and that it is principally shaped by social norms. Nonetheless, evolutionary psychology does not dismiss the influence of culture or socialization processes, as it emphasizes the interaction of evolved mechanisms with environmental context (Buss and Schmitt 2011; Campbell 2004). In essence, the debate is one of causality: evolutionary psychology advocates that different evolved mechanisms lead to psychological differences which in turn lead to different social roles and norms, while social psychology argues that different social roles lead to psychological differences (Buss 1995; Eagly and Wood 1999).¹ Even since the beginning of this century, several promising theoretical implications of evolutionary psychology for marketing have been identified and repeated calls have been made for more research on the matter (Bagozzi and Natarajan 2000; Colarelli and Dettman 2003; Garcia and Saad 2008). Nonetheless, it has not been until very recently that relevant empirical studies started to appear (Durante et al. 2014; Griskevicius, Goldstein, et al. 2009; Hartmann and Apaolaza-Ibanez 2013; Hudders et al. 2014; Wang and Griskevicius 2014). Evolutionary psychology can offer explanations for diverse aspects of consumer behavior, including responses to advertising (Saad and Gill 2000). As for consumer responses to decorative portrayals of women in advertising, it has been theoretically argued that advertisers base their creative decisions on an almost intuitive understanding of male responses to such depictions which can be explained by the evolved mechanism of mate attraction (Saad 2004). Yet, given that advertisements that portray women in this manner often target a female audience (Michell and Taylor 1990), the examination of female responses to such depictions under the prism of evolutionary psychology represents a thus far unexploited research direction, relevant to practitioners and academicians alike.

The present paper pursues the afore-discussed direction by first briefly reviewing extant literature regarding female reactions to images of women in advertising and drawing theoretical insight from the evolutionary psychology literature focusing on the evolved and context-sensitive mechanism of intrasexual competition. Subsequently, the paper describes a series of hypotheses deriving from a synthesis of the two fields. Then, the design and findings of two studies designed to test the hypotheses are presented.

The paper concludes with an overall discussion of the results and the main conclusions, the limitations of the studies and suggestions for future research.

A brief review of the advertising literature on female responses to portrayals of women in advertising

Gender stereotypes are beliefs about the traits, characteristics, roles and behaviors that differentially characterize men and women (Ashmore and Del Boca 1981). Stereotypes have four different components: trait descriptors, physical characteristics, role behaviors and occupational status (Deaux and Lewis 1984). Within academic research in advertising, the issue of gender stereotypes has received attention for more than 40 years now (Eisend 2010; Wolin 2003); researchers' vivid interest in the topic can be justified by the extensive use of stereotypic depictions by the advertising industry and the potential social implications of this phenomenon (Gulas and McKeage 2000; Lysonski and Pollay 1990). Despite the prolificacy of this research area, surprisingly little is to date known regarding the actual responses of female consumers to stereotypic presentations of women in specific ads, for the majority of the relevant literature consists of either content analyses aiming at assessing temporal and cultural differences in relevant advertising practices (e.g. Gilly 1988) or of studies investigating general attitudes toward the phenomenon of stereotyping in advertising (e.g. Ford and LaTour 1996).

Gender stereotypes in advertising refer to the tendency of advertisements to portray central figures in conformity with pre-established feminine or masculine traits, physical characteristics, occupational status and role behaviors (Eisend 2010). Especially regarding the latter, stereotypical depictions of women in advertisements typically involve their portrayal in decorative, traditional or non-traditional roles or as being equal to men (Plakoyiannaki and Zotos 2009). Traditional portrayals involve showing women as dependent upon men and/or in the role of the typical housewife, whereas non-traditional portrayals refer to depictions of women as career-oriented or involved in activities outside the home; women can be also portrayed neutrally, as equal to men (Plakoyiannaki et al. 2008; Zotos and Lysonski 1994). Decorative portrayals refer to women being presented as concerned with their physical appearance or as sex objects (Plakoyiannaki and Zotos 2009); these depictions are consistent with what Shimp (2008, 308) terms 'sexual objectification,' which 'occurs when ads use women (or men) as decorative or attention-getting objects with little or no relevance to the product category.' Although much has changed regarding the way women are portrayed in advertising over the last decades (for detailed reviews, see Eisend 2010; Furnham and Paltzer 2010; Stern 1999; Wolin 2003), there is evidence that suggests that even in recent years, more than half a century after the surge of the feminist movement, advertisements depicting women in decorative roles remain a frequent occurrence in both general audience magazines (Plakoyiannaki and Zotos 2009) and female-oriented magazines (Lindner 2004; Michell and Taylor 1990; Taylor, Landreth, and Bang 2005).²

In terms of the literature concerning actual consumer responses to stereotypic ads, there seems to be considerable agreement among researchers that women tend to believe that advertising in general does not portray them in a realistic manner (Christy 2006; Ford and LaTour 1996; Harker, Harker, and Svensen 2005; Lundstrom and Sciglimpaglia 1977; Zimmerman and Dahlberg 2008). Nonetheless, the few extant studies dealing explicitly with attitudinal reactions of female consumers to specific stereotypic advertisements have come up with diverging findings, often with little theoretical justification. In fact, extant evidence indicates that stereotypic portrayals 'can be helpful or detrimental'

to advertising effectiveness (Eisend, Plagemann, and Sollwedel 2014, 256). Some early studies have shown that female participants rate non-stereotyped portrayals of women in advertising more favorably in terms of liking (Duker and Tucker Jr. 1977) and preference (Leavitt 1978 as quoted in Whipple and Courtney 1985), whereas opposing results have also been reported (Bettinger and Dawson 1979 as quoted in Whipple and Courtney 1985). Moreover, Jones, Stanaland and Gelb (1998) report that women express negative attitudes toward stereotypic ads featuring a sexy female model, and Rouner, Slater and Domenech-Rodriguez (2003) state that female adolescents are critical of traditional gender role images of women in commercials. Jaffe and Berger (1994) conclude that egalitarian role portrayals are the most effective in terms of female responses to advertising, whereas Orth and Holancova (2004) have found that women have unfavorable reactions toward non-stereotypic ads that depict women as being superior to men. To further complicate matters, Orth, Malkewitz, and Bee (2010) report that female consumers experience more mixed emotions when gender roles are depicted in a way that is incongruous with their self-concept, but surprisingly express favorable attitudinal responses, while Vantomme, Geuens, and Dewitte (2005) distinguish between implicit and explicit preference and find that the former, but not the latter, is more favorable for ads portraying women in traditional, as opposed to non-traditional, roles. It has also been found that attitudes to stereotypic ads vary by individuals' age (Theodoridis et al. 2013) and gender-role orientations (Morrison and Shaffer 2003), as well as the advertised product category and its perceived 'gender' (Debevec and Iyer 1986; Whipple and Courtney 1985).

We note that most studies concerned with examining consumer responses to stereotypic ads focus on the 'role' component of stereotyping: most studies seem to contrast progressive (non-traditional) and traditional role portrayals (e.g. Debevec and Iyer 1988; Morrison and Shaffer 2003), others compare reactions to egalitarian, traditional and superwoman portrayals of female models (Jaffe and Berger 1994) and yet others differentiate between images of women in decorative, traditional and non-traditional roles (Theodoridis et al. 2013). More importantly perhaps, we observe that from a theoretical standpoint, researchers have tried to account for any differences found in women's evaluations of such ads through the socialization patterns of women (see, for instance, the explanations put forth by Orth and Holancova 2004 or Morrison and Shaffer 2003), thus adhering to the Standard Social Science Model. Nonetheless, evolutionary psychology could offer an entirely different explanation.

Insights from evolutionary psychology on the evolved mechanism of female intrasexual competition

How can evolutionary principles aid the understanding of consumer responses to female portrayals in advertising? Discussing this very question, Saad (2004) argues in favor of the evolved mechanism of mating preferences underlying men's responses to decorative representations of the opposite sex in advertisements. He posits that women in decorative roles embody desirable characteristics, such as youthfulness and physical attractiveness, eliciting favorable attitudes on the part of the male audience. Notwithstanding the fact that the paper in question broke new ground in advertising research, calling attention to the merit of evolutionary psychology for the comprehension of consumer responses to gender stereotypes in advertising, Saad's (2004) rationale does not address why women are portrayed in decorative roles not only when advertisers target male audiences, but also when there is an exclusively female audience. Thus, we turn to evolutionary psychology in search of a mechanism explaining the behavior of women toward same-sex others.

A very recent paper by Durante et al. (2014) provides evidence that female consumer behavior has a strong evolutionary basis with women's hormonal fluctuations significantly affecting their consumption patterns so as to improve their competitive standing relative to other women. In a different paper, published almost simultaneously, Hudders et al. (2014) undertake a series of studies that show a link between luxury consumption and female intrasexual competition.

Within the field of evolutionary psychology, intrasexual competition is considered as a mechanism that is closely related to the mechanisms of sexual attraction and mate selection. The latter mechanisms have long attracted researchers' interest (see Buss 1989; Feingold 1990), given that there are more differences than similarities between the two sexes in these domains (Buss and Schmitt 2011). The mechanisms of sexual attraction, apart from offering explanations for various aspects of male-to-female and female-to-male interactions, are suggested to also lie behind some behavioral predispositions toward members of one's own sex in the context of *intrasexual competition*, i.e. 'competition between members of the same sex for mating access to members of the opposite sex' (Buss 1988, 616). Evolutionary psychology considers intrasexual competition an evolved mechanism which attempts to solve the adaptive problem of scarcity of suitable mates (Campbell 2004; Geary 2000); in line with parental investment theory,³ males, as the sex investing less in parenting, tend to express more aggression toward other competing males for access to constrained resources, with the latter resources in this case being the higher investing sex (Schmitt 2005; Trivers 1972). Consequently, evolutionary literature is replete with instances of competition and aggression among males and relevant supporting evidence (e.g. Buss 1988; Van Vugt, De Cremer, and Janssen 2007; Wilson and Daly 1985).

Although male intrasexual competition is well acknowledged ever since Darwin's era (Buss 1988), female-to-female competition is still a relatively unexplored territory, even within the realms of evolutionary psychology where it long remained a 'politically taboo subject' (Campbell 2004, 23). As of late though, a growing volume of studies provides evidence that competition also exists among women who, not unlike men, compete for access to desirable mates (Fink et al. 2014; Piccoli, Forroni, and Carnaghi 2013; Vaillancourt 2013). However, female intrasexual competition is less visible; women are less likely than men to employ directly aggressive competitive tactics, often engaging in acts of indirect or relational aggression, such as gossip or manipulation (Campbell 2004; Vaillancourt 2013). In line with the distinction between behavior and psychological mechanisms discussed by Buss (1998),⁴ the manifest behavior of indirect aggression toward same-sex rivals can be viewed as the output of the evolved psychological mechanism of intrasexual competition. In stark contrast to this evolutionary view, the explanation for female competition advocated by the Standard Social Science Model is that women compete among themselves because of their internalization of patriarchal values and their tendency to conform to socially predefined gender roles (Bussey and Bandura 1999; Wood and Eagly 2002).

Returning to the fundamentals of intrasexual competition, it is interesting to note that mating preferences operate as a 'selective force' on intrasexual competition (Buss 1992, 252); in other words, members of the same sex employ competitive tactics that are closely aligned to the traits favored by the opposite sex. For instance, competing females tend to enhance their appearance more than competing males, mirroring the male tendency to favor physical attractiveness in potential mates (Buss 1992). As Campbell (2004, 19) notes, 'attractiveness appears to be the currency of female competition even when no mention is made of what the competition is about.'

Intrasexual competition can assume the form of either *self-promotion*, whereby one seeks to acquire or appear to have the traits favored by the opposite sex, or *competitor derogation*, whereby one seeks to reduce the perceived mate value of same-sex rivals (Schmitt and Buss 1996, 1187). More broadly defined, self-promotion regards ‘any act used to enhance the positive qualities of oneself, relative to same-sex others,’ whereas competitor derogation refers to ‘any act that is used to decrease a rival’s value relative to oneself’ (Cox and Fisher 2008, 145). Hence, from an evolutionary psychology perspective, it would make adaptive sense for a female to either seek to (or even appear to) embody the traits favored by men, such as youth and physical attractiveness, or to derogate her same-sex ‘opponents’ in terms of these traits so as to enhance her own competitive standing. In the context of female competition, self-promotional tactics include the display of resources and the enhancement of one’s appearance while derogatory tactics involve acts such as gossip and rumors (Buss 1992). Extant evidence from women’s self-reports on the competitive tactics they use indicates that women mainly tend to attract attention to their physical appearance in the interest of self-promotion (Cashdan 1998 as quoted in Campbell 2004; Fisher and Cox 2011; Walters and Crawford 1994 as quoted in Campbell 2004). Nonetheless, intolerance of physically attractive women (Leenaars, Dale, and Marini 2008), gossip aiming at the derogation of other women (Buss and Dedden 1990) and criticism of their appearance (Fisher 2004; Fisher and Cox 2011; Vaillancourt 2013) have also been reported.⁵ From an evolutionary standpoint, competition among females can vary depending on a variety of ecological factors, such as age, family status, sexual maturity, resource availability and mate value (Campbell 2004). For instance, during adolescence and early adulthood when a young women’s fertility is high, indirect aggression toward other women is increased (Massar, Buunk, and Rempt 2012). It has also been reported that women in a relationship are more likely to use competitor derogation than other competitive strategies (Fisher and Cox 2011). Furthermore, Lydon et al. (1999) have found that women’s level of commitment to a romantic relationship affects ratings of attractiveness of potential same-sex opponents. Some evidence also suggests that hormonal fluctuations over the course of the ovulatory cycle can affect intrasexual competition; it has been found that women with high estrogen levels are more likely to give other women lower attractiveness ratings (Baenninger, Baenninger, and Houle 1993; Fisher 2004) and to dehumanize them (Piccoli, Forroni, and Carnaghi 2013).⁶

In order to optimize the outcome of the competition and to avoid wasting resources, females as well as males tend to assess their opponents’ relative mate value before competing (Sugiyama 2005). As is the case with most evolved mechanisms, which are both functional and context-sensitive (Buss 1998, 24), the mechanism of intrasexual competition is activated only in the presence of specific *immediate situational input* (Buss 1995, 11), that is, only if relevant cues exist in a certain context. Exploring the motives for same-sex aggression acts, Griskevicius, Tybur, et al. (2009) have found that both status and mating goals (*competition* and *courting* motives, respectively) triggered women’s indirect aggression toward other women. Simply put, women can compete with other women even if no mention of the opposite sex is made (see also Hudders et al. 2014; Durante et al. 2011). It is hence interesting to note that acts stemming from intrasexual competition do not necessarily require immediate mating or reproductive-related motives.

Having discussed the evolutionary roots of female intrasexual competition, the paper proceeds to examine how these principles can be utilized to explain the responses of female consumers to advertisements depicting women in decorative roles. The next section of the paper presents a series of relevant hypotheses, along with their supporting rationale.

Hypotheses

From an evolutionary psychology perspective, we suggest that female attitudes toward advertisements depicting women in decorative roles can be explained via the mechanism of female competition. Hence, we essentially argue that an activation of the competition mechanism will influence the reactions of female consumers to such ads.

As discussed previously, extant research on gender stereotypes in advertising has come up with diverging evidence regarding female attitudes toward depictions of women in stereotypic roles in the context of specific ads (e.g. Jaffe and Berger 1994; Orth and Holancova 2004). When it comes to physical attractiveness which is another component of stereotypes, a distinct stream of advertising research concerned with spokespersons' physical attractiveness has established that women can have positive (for a review, see Belch, Belch, and Villareal 1987), as well as negative (e.g. Caballero, Lumpkin, and Madden 1989), affective reactions to attractive female models in advertising. Under a social comparison perspective, Bower (2001, 53) refers to the former positive reactions as the 'what is beautiful is good' effect and seeks to account for the latter negative reactions through social comparison jealousy and derogation, thus arguing that female consumers compare themselves with the model and act as 'threatened comparers' (Bower 2001, 54), experiencing negative affect.

Under an evolutionary psychology perspective, we view attractiveness as the currency of female competition (Campbell 2004) and suggest an alternate explanation of why women would derogate a female model in an advertisement; we propose that the latter is the case when women unconsciously compete with the model through competitor derogation. Women engaging in competitor derogation have been found to derogate the attractiveness of their female rivals, as previously discussed. The question that thus arises is whether it is possible for women to compete with models in advertisements. Previous evolutionary research indicates that in order for women to compete, the female rival does not necessarily have to be 'in the flesh': Durante et al. (2011) found that ovulating women tended to choose sexier clothes when primed with photos of attractive women, comparing themselves to the latter and attempting to self-promote, while Fisher (2004) reported that women presented with photos of other women derogated their attractiveness. Furthermore, it has been shown that women compare themselves with female models in advertisements (Martin and Kennedy 1993; Richins 1991) for both self-evaluation and self-improvement motives (Martin and Kennedy 1994) and can experience positive and negative affective reactions toward them (Bower 2001). In line with Buss' (1998) view of evolved mechanisms, we thus reason that if women are motivated to compete (situational input), the attitudes and attractiveness evaluations of the model will reflect the corresponding psychological mechanism, i.e. their tendency to self-promote or derogate the woman in front of them.

If female consumers are therefore motivated to engage in a competitor derogation strategy, they can be reasonably expected to evaluate other women as less attractive and by extension express unfavorable attitudes toward advertisements showing women in decorative roles. Contrarily, when women are motivated to engage in a self-promotion strategy, they will not actively derogate the model's attractiveness and resulting attitudes will be more favorable. Therefore, the following hypotheses are formulated:

H1: When women compete through self-promotion, they will evaluate a model in a decorative role as more attractive than when they compete through competitor derogation.

H2: When women compete through self-promotion, their attitudes toward an ad depicting a model in a decorative role will be more favorable than attitudes toward the same ad when women compete through competitor derogation.

We therefore propose that ads portraying women in decorative roles in female-oriented media are effective when they aid female consumers in engaging in intrasexual competition through a self-promotion strategy. However, although such favorable outcomes might reasonably be the advertisers' intention, in practice, this might not always be the case, since under different circumstances, ads showing women in decorative roles could elicit less favorable attitudes resulting from female consumers employing a competitor derogation strategy. We further posit that the aforementioned circumstances may result from situational aspects of the exposure (the motivation elicited by the medium context and the type of self-referencing). Therefore, we essentially argue that ads in female-oriented media showing women in decorative roles are likely to lead to favorable attitudinal outcomes in certain *contexts*, with context being the operative word.

Effects of motivation elicited by the medium context

While the few past studies that have examined consumer responses to stereotyped ads have only dealt with the advertising stimulus per se, we propose that media context influences female attitudes toward ads depicting models in decorative roles. Media context is defined as 'the characteristics of the content of the medium in which an ad is inserted [...], as they are perceived by the individuals who are exposed to it' (De Pelsmacker, Geuens, and Anckaert 2002, 49). Past advertising literature offers abundant evidence supporting the influence of media context on advertising effects (for a review, see De Pelsmacker, Geuens and Anckaert 2002). Media context characteristics can be subjective or objective (Van Reijmersdal, Smit, and Neijens 2010); for the purposes of the present paper, we focus on the influence of motivational state (the 'subjective mental reactions that people experience after confrontation with medium content'; Van Reijmersdal, Smit, and Neijens 2010, 281) as a subjective medium context characteristic. We posit that the motivational state (neutral or competitive) that the female audience finds themselves in after reading an article in a female-oriented magazine or a website can operate as situational input for the evolved mechanism of female intrasexual competition and that the activation of the latter mechanism will affect female consumers' attitudes toward ads depicting women in decorative roles. Such a view appears to concur both with the context-sensitive nature of the intrasexual competition mechanism (Buss 1995; Campbell 2004) and the notion that media viewing context functions as situational input for evolutionary mechanisms that explain responses to advertising (Griskevicius, Goldstein, et al. 2009). Hence, the following hypothesis is put forward:

H3: The motivational state induced by the medium context will influence attitudes toward ads depicting women in decorative roles.

Effects of type of self-referencing

Moreover, we posit that self-referencing moderates the previously hypothesized main effect. One of the mechanisms proposed to account the effect of media context is that it operates as a cognitive prime that 'activates a semantic network of related material that guides attention and determines the interpretation of the ad' (Dahlen 2005, 90). A related aspect of the interpretation of a stereotypic ad is self-referencing, which is defined as 'a

cognitive process whereby individuals associate self-relevant stimulus information with information previously stored in memory to give the new information meaning' (Debevec and Iyer 1988, 74). It has been repeatedly shown that consumers relate advertisements to their own selves (e.g. Burnkrant and Unnava 1995; Hong and Zinkhan 1995), with high self-referencing leading to more positive attitudes (Chang 2005). More importantly, low self-referencing has been found to mediate the effect of stereotypic role portrayals in advertising on attitudinal responses (Debevec and Iyer 1988; Morrison and Shaffer 2003). The latter two studies have only dealt with one's general self-concept; nonetheless, the self is commonly viewed as comprising of past (existing) and future (imagined) self-concepts (see Dimofte and Yalch 2010). Moreover, it has been proposed that consumers process advertisements by referring to either autobiographical memories or imagined events (Escalas 2004). Interestingly, previous research has indicated that the temporal orientation of self-referencing (i.e. whether consumers engage in retrospective self-referencing processing the ad by referencing memories about their past selves or whether they engage in anticipatory self-referencing whereby the ad is processed with reference to their imagined or anticipated self) differentially affects ad processing (Dimofte and Yalch 2010; Krishnamurthy and Sujana 1999).

In order to predict the potential effects of anticipatory and retrospective self-referencing, we return to evolutionary principles regarding the self. Within evolutionary psychology, the *symbolic self* or one's own self-concept is defined as 'the language-based and abstract representation of one's own attributes and the use of this representation for effective functioning in affective, motivational and behavioral domains' (Sedikides and Skowronski 2002). The symbolic self is considered an adaptation which has evolved over time as a response to ecological or social pressures (Sedikides and Skowronski 2002). Self-referencing has been found to play an important role in mate selection (Allen and Hauber 2013). Campbell and Wilbur (2009) have demonstrated that the self-concepts of both women and men mirror the preferences of prospective mates.

On the basis of the aforementioned discussion, we anticipate that the temporal orientation of self-referencing (essentially thinking of the past, i.e., retrospectively vs. thinking of the future, i.e., anticipatorily) will have an impact on how positively a stereotypic ad is perceived. More specifically, we hypothesize that under *retrospective* self-referencing instructions, the activation of the competition mechanism will lead women to engage in a competitor derogation strategy which will result in less favorable attitudes toward the advertised brand. Given that ad processing under retrospective self-referencing instructions is a top-down process (Krishnamurti and Sujana 1999), we propose that women process the stereotyped ad with reference to their past 'actual' selves (Sedikides and Skowronski 2002) and compete by seeking to devalue their 'opponent,' i.e. the model in the ad. This would ultimately result in less favorable attitudes toward the ad among women. The underlying logic behind this prediction is based on the assumption that the portrayal of the female model in a decorative role is appealing to males (Saad 2004); such a portrayal suggests to female consumers that the model possesses traits favored by the opposite sex. Therefore, the following hypothesis is formulated:

H4: When the self-referencing process is retrospective, a competitive context will lead to less favorable attitudes toward ads depicting women in decorative roles with respect to a neutral context.

Conversely, we hypothesize that under anticipatory self-referencing instructions, triggering the intrasexual competition mechanism will lead women to engage in self-promotion, thereby expressing more favorable attitudes toward the advertisement. Given that ad

processing under anticipatory self-referencing instructions is a bottom-up process (Krishnamurti and Sujan 1999), we propose that women implicitly reference the ad with regard to their 'symbolic self far into the future' (Sedikides and Skowronski 2002) and set corresponding goals, thus competing by seeking to improve their relative standing. The idea here is that the idealized model becomes representative of what the woman herself wants to look more like in the future. In this context, consumers will respond positively to the decorative model and have favorable attitudes toward the stereotyped ad. Hence, we hypothesize that:

H5: When the self-referencing process is anticipatory, a competitive context will lead to more favorable attitudes toward ads depicting women in decorative roles with respect to a neutral context.

Study 1: Competitive strategies and attitudes toward decorative ads

Experimental design and subjects

The purpose of the first study was to test the key assumption described above, i.e. that attitudes toward an ad showing a woman in a decorative role differ with respect to the competitive strategy employed by the female audience. To test hypotheses 1 and 2, an experimental study was conducted, with the participation of 62 female students aged between 21 and 26 years ($M = 22.66$, $SD = 1.32$). A student sample was selected in an attempt to keep participants' age relatively constant since the latter has been previously found to affect both attitudes toward stereotypical ads (Theodoridis et al. 2013) and indirect aggression toward other women (Massar, Buunk, and Rempt 2012). Subjects were randomly assigned to one of two conditions: half of the students read a scenario designed to motivate them to engage in a self-promotion strategy, whereas the remaining half read another scenario designed to motivate them to employ a competitor derogation strategy. No significant differences emerged with respect to age across the different conditions ($F(1,61) = 2.13$, $p = 0.150$).

Procedure, stimuli and measures

Participants completed an online questionnaire for the purposes of the study. They initially read a cover story which indicated that the experiment investigated their ability to memorize information under different instructions; it was expected that these instructions would not trigger demand effects. Participants were initially exposed to a list of six fictional brand names and were asked to study them carefully; this was a filler task intended to enhance the plausibility of the cover story. Subsequently, they saw a short scenario that primed them to engage in either a self-promotion or a competitor derogation strategy, depending on the condition. They were instructed to read it and to imagine themselves in the situation and to try to feel the emotions and feelings that the woman in the story is experiencing. The instructions were adapted from Griskevicius, Tybur, et al. (2009). The scenarios⁷ were based on a story used to manipulate context in Hudders et al. (2014) and can be found in Appendix 1. Notwithstanding their artificiality, scenarios are commonly used in both evolutionary psychological research (e.g. Buss et al. 1992; Wilson and O'Gorman 2003) and experimental studies in the consumer behavior literature (e.g. Griskevicius, Goldstein, et al. 2009; Williams and Steffel 2014; Wang and Griskevicius 2014).

After reading the scenarios, the subjects answered a series of questions about how likely they were to engage in a self-promotion or competitor derogation strategy; this was intended as a manipulation check. After completing a filler recognition task, participants were shown a mock ad and then indicated their attitudes toward it and listed their thoughts. For reasons of internal validity, the mock ad referred to a fictitious brand for a new web radio. The advertised product category was selected on the basis of a pretest (12 female respondents) so as to be gender neutral⁸ and non-attractiveness-enhancing, since prior studies have found that attitudes toward stereotypic ads differ with regard to the product's perceived gender (Debevec and Iyer 1986) and that the degree to which a product is seen as attractiveness-enhancing influences women's preferences for it in a competitive context (Hudders et al. 2014). The ad (Appendix 2) was designed with the use of professional photo editing software and comprised a professionally taken photo of a female model lying on a couch, the fictitious brand name (Tempo) and a tagline (The new web radio); the ad was selected on the basis of a pretest (22 female respondents).⁹ Some additional filler questions and an open-ended question regarding the perceived purpose of the study followed. As intended, none of the participants guessed its true purpose. Then, participants were again presented with the target ad and evaluated the attractiveness of the model in the ad; the evaluation of attractiveness was intended as an indicator of whether the respective competition strategies had been transferred to the model in the ad. Physical attractiveness ratings have been previously used as a proxy for competitive strategies employed by Fisher (2004, 271), in line with extant evolutionary psychological literature that links attractiveness to competitive tactics (Campbell 2004; Vaillancourt 2013). A similar indirect assessment of social comparison derogation has also been used by Bower (2001, 56). We therefore reasoned that negative model attractiveness' evaluations could be considered as evidence of competitor derogation occurring, while positive model attractiveness' evaluations could be seen as evidence of self-promotion. Finally, subjects indicated the extent to which they believed that its portrayal of women was stereotypic. The questionnaire concluded with demographics questions and the debriefing of the participants.

Table 1 presents the variables used in the study and the operationalization of each. As shown in the Table, all scales had satisfactory reliability (all Cronbach α values above 0.70).

Results

There was a significant main effect of the scenario read on participants' self-reported intention to engage in a self-promotion strategy ($F(1,60) = 243.96, p < 0.001$), with the subjects in the self-promotion condition expressing a significantly more pronounced intention to engage in self-promotion than their counterparts in the competitor derogation condition ($M_{\text{self-promotion}} = 5.34, M_{\text{competitor derogation}} = 3.30; t(60) = 15.62, p < 0.001$). The main effect of the scenario on participants' intention to derogate the competitor was also significant ($F(1,60) = 281.08, p < 0.001$); participants in the competitor derogation condition indicated that they were more likely to employ a competitor derogation strategy than those in the self-promotion condition ($M_{\text{self-promotion}} = 2.66, M_{\text{competitor derogation}} = 5.24; t(60) = -16.77, p < 0.001$). Thus, the manipulation of competitive strategy was successful.

As expected, competitive strategy was found to have a significant effect on attractiveness ratings ($F(1,60) = 42.30, p < 0.001$), with subjects engaging in self-promotion rating the model's attractiveness higher than their counterparts engaging in competitor

Table 1. Operationalization of variables in Study 1

Variable/construct	Description	Items	Operationalization/measure	Reliability (Cronbach's α)
Attitude toward the ad	Four-item, seven-point semantic differential scale (Mitchell and Olson 1981)	<ul style="list-style-type: none"> • Good/bad* • Like/dislike* • Irritating/not irritating • Interesting/uninteresting 		0.90
Model attractiveness	Single item, seven-point Likert-type scale (Fisher 2004)	Extremely unattractive/extremely attractive		n/a
Intention to use a self-promotion strategy	Six-item, seven-point scale with endpoints 'definitely would not do' and 'definitely would do' (Fisher and Cox 2011)	<p>If I sensed that another woman was competing with me for attention, I would:</p> <ul style="list-style-type: none"> • try to make myself physically look more attractive • try to seem nice, caring and helpful • try to seem independent and play 'hard to get' • flirt and make eye contact • show off my body, especially one of my good features • try to hide my flaws 		0.706
Intention to use a competitor derogation strategy	Seven-item, seven-point scale with endpoints 'definitely would not do' and 'definitely would do' (Fisher and Cox 2011)	<p>If I sensed that another woman was competing with me for attention, I would:</p> <ul style="list-style-type: none"> • mention to the man that the rival is immature • tell the man that the rival is promiscuous • actively put down the rival to the man • try to derogate or say something negative about the rival • tell gossip to the man • hide good things about the rival when asked about them • point out to the man some flaws in the rival's appearance 		0.857
Decorative/stereotypic portrayal of model in the advertisement	Two items, seven-point Likert scale	<ul style="list-style-type: none"> • The advertisement depicts women in a stereotyped manner. • The advertisement shows women as decorative objects. 		0.70

*Recorded.

derogation ($M_{\text{self-promotion}} = 4.94$, $M_{\text{competitor derogation}} = 3.19$; $t(60) = 6.504$, $p < 0.001$), hence providing support for H1. This significant effect can be interpreted as evidence that the strategies resulting from the manipulations have been transferred to the model in the ad. Additional evidence supporting this assumption was obtained from coding participants' thoughts relating to the model according to their valence. Participants in the self-promotion condition had a significantly higher number of positive (vs. negative) thoughts about the model ($M_{\text{positive}} = 2.00$, $M_{\text{negative}} = 0.61$; $t(30) = 5.31$, $p < 0.001$), while the opposite was the case for participants in the competitor derogation condition ($M_{\text{positive}} = 0.77$, $M_{\text{negative}} = 1.81$; $t(30) = -3.46$, $p < 0.01$).

Regarding the effect of competitive strategy on attitude toward the ad, a one-way ANOVA indicated that it was significant ($F(1,60) = 110.27$, $p < 0.001$).¹⁰ As hypothesized, the subjects in the self-promotion condition expressed more favorable attitudes toward the ad than those in the competitor derogation condition ($M_{\text{self-promotion}} = 5.12$, $M_{\text{competitor derogation}} = 3.06$; $t(60) = 10.50$, $p < 0.001$). Hence, H2 is also supported.

Study 2: Effects of motivational state elicited by the medium context and temporal orientation of self-referencing on attitudes toward decorative ads

Experimental design and subjects

To test Hypotheses 3–6, a 2×2 (motivational state: neutral/competitive \times self-referencing: retrospective/anticipatory) between-subjects experiment was conducted, with the participation of 88 female students aged between 20 and 26 years ($M = 22.27$). Subjects were randomly assigned to one of the four conditions (22 subjects per condition) in order to minimize the potential of systematic differences in personal characteristics such as stage in the ovulatory cycle (Fisher 2004). No significant differences emerged with respect to age across the different conditions ($F(3,84) = 1.908$, $p = 0.134$).

Procedure, stimuli and measures

Participants received a link to an online questionnaire and were led to believe that they were participating in two unrelated studies. They initially read a cover story identical to the one used in Study 1 and were then asked to read an excerpt from an advice column at a women's website; they were instructed to concentrate on the story because they were to be asked about it later on and to try to feel the emotions and feelings that the woman in the story is experiencing. In reality, the excerpts were two different stories (one per condition) designed to manipulate subjects' motivation and to elicit neutral or competitive motives (Appendix 3). The stories and instructions were adapted from Griskevicius, Tybur, et al. (2009). Participants then answered a series of questions regarding their motivational state intended to check the success of the manipulation (desire to compete, desire to attract a mate, positive arousal and negative arousal) and some filler recall questions regarding the story to enhance the believability of the cover story. Subsequently, subjects were exposed to a mock ad (identical to the one used in Study 1); half of them were instructed to look carefully at the ad and try to relate it to an experience that they have had in the past (retrospective self-referencing condition), whereas the other half were told to relate the ad to an experience they may have in the future (anticipatory self-referencing condition), per Krishnamurti and Sujun (1999). Next, participants indicated their attitudes toward the ad, as well as the extent to which they engaged in self-referencing in general and in the intended type of self-referencing (past orientation, future orientation). After

that, participants answered two additional filler questions and an open-ended question to assess demand bias. They were thanked for their participation in the study and were asked to answer another supposedly unrelated questionnaire regarding skepticism toward firms. On the next page, they indicated their agreement with some filler statements and indicated their attitudes toward stereotyped portrayals in advertising. The latter was included to address potential confounding effects, given that a priori attitudes toward stereotyping in advertising have been previously found to influence attitudes toward specific ads (Orth and Holancova 2004); the cover story aimed at concealing any link between the two and at discouraging the participants to use the ad stimulus as a point of reference for their answers. An open-ended question asking participants about the purpose of the study followed (as previously, participants were unsuspecting) and the participants were debriefed and thanked for their participation.

Table 2 presents the variables used in the study and the operationalization of each. As shown in the Table, all scales had satisfactory reliability (all Cronbach α values above 0.70).

Results

There was a significant main effect of the self-referencing instructions on the manipulation check for past orientation ($F(1,84) = 255.14, p < 0.001$), with the subjects in the retrospective self-referencing condition being more past oriented than those in the anticipatory self-referencing one ($M_{\text{retrospective}} = 5.77, M_{\text{anticipatory}} = 2.27; t(86) = 15.83, p < 0.001$). The main effect of self-referencing on the manipulation check for future orientation was also significant ($F(1,84) = 215.47, p < 0.001$), with the subjects in the anticipatory self-referencing condition being more future-oriented than the subjects in the retrospective self-referencing one ($M_{\text{retrospective}} = 2.50, M_{\text{anticipatory}} = 5.75; t(86) = -14.80, p < 0.001$). There were no significant differences in the subjects' degree of general self-referencing between the two conditions ($t(86) = -0.06, p = 0.956$). Regarding the manipulation of motivational state, there was a significant main effect of the type of story read on the manipulation check for desire to compete ($F(1,84) = 169.02, p < 0.001$), with the subjects in the competitive motivation condition expressing increased desire to compete with regard to the subjects in the neutral motivation condition ($M_{\text{neutral}} = 2.53, M_{\text{competitive}} = 5.08; t(86) = -13.12, p < 0.001$). Additionally, there was a significant main effect of the type of story read on the manipulation check for desire to attract a mate ($F(1,84) = 86.92, p < 0.001$), with the subjects in the competitive motivation condition expressing increased desire to attract a mate with regard to the subjects in the neutral motivation condition ($M_{\text{neutral}} = 3.17, M_{\text{competitive}} = 4.90; t(78.86) = -9.41, p < 0.001$). The story intended to elicit competitive motives evoked similar levels of positive and negative arousal (3.03 vs. 2.80, respectively; $t(43) = 1.87, p = 0.068$). Therefore, both manipulations were successful.

To test the relevant hypotheses, a two-way independent ANOVA (2 levels of motivational state \times 2 levels of self-referencing) was conducted, with attitude toward the ad as the dependent variable.¹¹ There was a significant main effect of self-referencing type on attitude toward the ad ($F(1,84) = 30.38, p < 0.001$), with the subjects in the anticipatory self-referencing condition expressing more favorable attitudes than those in the retrospective self-referencing one ($M_{\text{retrospective}} = 3.23, M_{\text{anticipatory}} = 4.59; t(86) = -5.03, p < 0.001$). Contrary to H3, the main effect of motivational state on attitude was not significant ($F(1,84) = 0.17, p = 0.680$). However, the means plot (Figure 1) indicates a disordinal interaction between the two factors. Indeed, there was a significant interaction effect

Table 2. Operationalization of variables in Study 2.

Variable/construct	Description	Items	Reliability (Cronbach's α)
Attitude toward the ad	Four-item, seven-point semantic differential scale (Mitchell and Olson 1981)	<ul style="list-style-type: none"> • Good/bad* • Like/dislike* • Irritating/not irritating • Interesting/uninteresting 	0.93
Desire to compete	Two items, seven-point scale with endpoints 'not at all' and 'very much' (Griskevicius, Tybur, et al. 2009)	<ul style="list-style-type: none"> • To what extent do you feel competitive? • To what extent are you motivated to compete? 	0.935
Desire to attract a mate	Two items, seven-point scale with endpoints 'not at all' and 'very much' (Griskevicius, Tybur, et al. 2009)	<ul style="list-style-type: none"> • To what extent do you feel romantically aroused? • To what extent are you motivated to attract a romantic partner? 	0.856
Positive arousal	Two items, seven-point scale with endpoints 'not at all' and 'very much' (Griskevicius, Tybur, et al. 2009)	<ul style="list-style-type: none"> • To what extent do you feel enthusiastic? • To what extent do you feel excited? 	0.845
Negative arousal	Two items, seven-point scale with endpoints 'not at all' and 'very much' (Griskevicius, Tybur, et al. 2009)	<ul style="list-style-type: none"> • To what extent do you feel frustrated? • To what extent do you feel angry? 	0.893
General self-referencing	Two items, seven-point Likert-type (Krishnamurthy and Sujan 1999)	<ul style="list-style-type: none"> • I could relate myself to the ad. • The ad was personally relevant. 	0.701
Past orientation of self-referencing (retrospective)	Single item, seven-point Likert-type (Krishnamurthy and Sujan 1999)	I had thoughts relating to my past when I saw the ad.	n/a
Future orientation of self-referencing (anticipatory)	Single item, seven-point Likert-type (Krishnamurthy and Sujan 1999)	I thought of myself in the future when I saw the ad.	n/a
General attitudes toward sex role portrayals in advertising	12-item, seven-point Likert-type scale (Lundstrom and Scigimpaglia 1977)	<ul style="list-style-type: none"> • Ads which I see show women as they really are. • Ads suggest that women are fundamentally dependent upon men.* 	0.870

(continued)

Table 2. (Continued)

Variable/construct	Description	Items	Reliability (Cronbach's α)
Operationalization/measure			
		<ul style="list-style-type: none"> • Ads which I see show men as they really are. • Ads treat women mainly as sex objects.* • Ads which I see accurately portray women in most of their daily activities. • Ads suggest women make important decisions. • Ads which I see accurately portray men in most of their daily activities. • Ads suggest that women don't do important things.* • Ads suggest that a woman's place is in the home.* • I'm more sensitive to the portrayal of women in advertising than I used to be.* • I find the portrayal of women in advertising to be offensive.* • Overall I believe that the portrayal of women in advertising is changing for the better. 	

*Recorded.

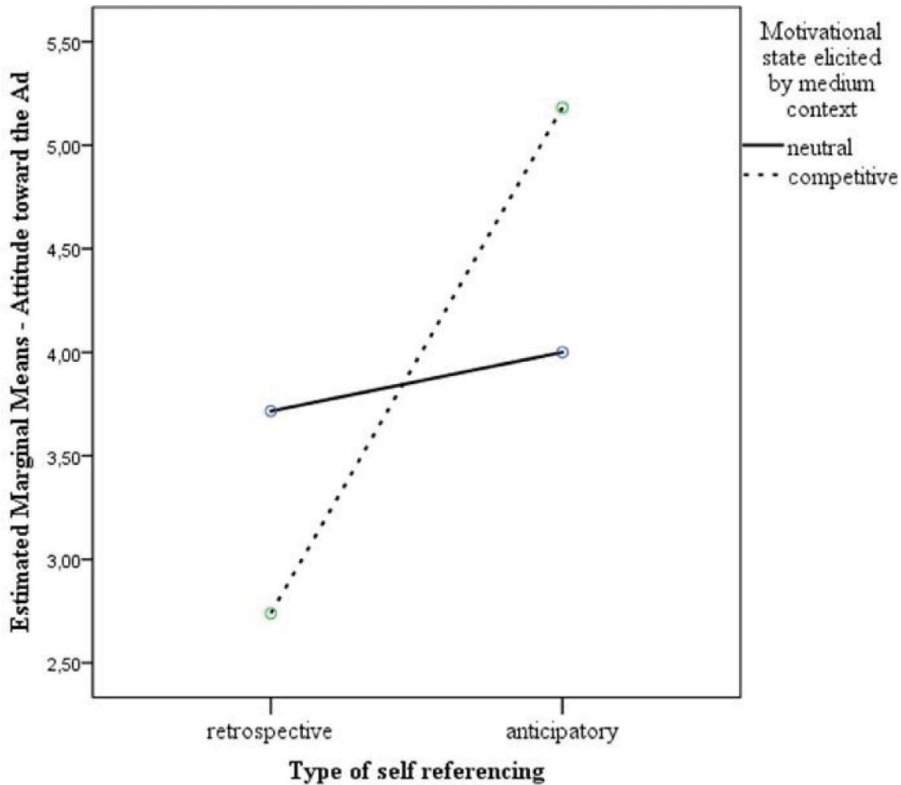


Figure 1. Effects of motivational state and self-referencing on attitude toward the ad.

between motivational state and self-referencing type ($F(1,84) = 19.04, p < 0.001$), which indicates that the temporal orientation of self-referencing moderates the effect of motivational state on attitude toward the ad. To further investigate this interaction, a Simple Effects Analysis was performed at each level of the moderator variable (i.e. self-referencing). As recommended by Pedhazur and Schmelkin (1991, 527), we adjusted the alpha level to 0.025. There was a significant simple main effect of motivational state on attitude toward the ad at the retrospective level of self-referencing ($F(1,85) = 5.80, p < 0.025$); when they were processing the ad with reference to their past selves, subjects in the competitive motivation condition exhibited less favorable attitudes toward the ad with regard to their counterparts in the neutral motivation condition ($M_{\text{neutral}} = 3.72, M_{\text{competitive}} = 2.74; t(42) = 2.63, p < 0.025$). Hence, H4 is supported. The Simple Effect Analysis also indicated a significant simple main effect of motivational state on attitude toward the ad at the anticipatory level of self-referencing ($F(1,85) = 8.48, p < 0.01$); when they were processing the ad with reference to their future selves, subjects in the competitive motivation condition exhibited more favorable attitudes toward the ad with regard to their counterparts in the neutral motivation condition ($M_{\text{neutral}} = 4.00, M_{\text{competitive}} = 5.18; t(42) = -3.62, p < 0.01$). Thus, H5 is supported. The fact that the two opposite simple main effects seem to balance each other out accounts for the observed non-significant main effect of motivational state on attitude.

Discussion, limitations and conclusions

Researchers have long been interested in the portrayal of female roles in advertising; surprisingly though, only a scant of extant studies has examined actual responses of women toward such depictions, coming up with conflicting evidence. The continuously developing literature that stresses the importance of the evolved mechanism of female competition to the understanding of female consumption behavior has the potential to offer an alternative explanation of women's stances toward advertisements presenting women in decorative roles. Accordingly, the two studies reported in this paper began to address the need for further understanding of female attitudes toward such ads from a female competition standpoint. Since competition is activated by immediate situational input, we focused on situational characteristics of exposure to ads. In this spectrum, we investigated the effect of alternative competitive strategies employed by female consumers on attitudes toward advertisements portraying women as decorative objects. Additionally, we examined how the motivational state elicited by the medium context affects attitudes toward this type of ads and tested the hypothesis that the temporal orientation of self-referencing moderates this effect. The results of the two studies largely confirmed our hypotheses. In particular, the results of Study 1 indicate that when female consumers are primed to engage in self-promotion in the interest of competing with other females, an ad portraying a woman in a decorative role elicits favorable reactions. Contrarily, when women are primed to engage in competitor derogation, attitudes toward the focal ad substantially deteriorate. In accordance with our conceptual framework, the observed effect may be explained by the tendency of women in the latter case to perceive the female model in the ad as a rival, seek to derogate her attractiveness and thus respond unfavorably toward the ad. The results of Study 2 shed additional light into this phenomenon, indicating that when women process an ad featuring a female model in a decorative role with reference to their past selves and the competition mechanism is activated by situational input in the form of an article in the medium, attitudes toward the ad are generally negative. On the other hand, if women are encouraged to process the ad with reference to their future selves and an article in the medium motivates them to compete, attitudes toward the ad are significantly more favorable.

Some limitations of the studies represent interesting directions for future research. For instance, as is the case with most laboratory experiments, our experimental studies are characterized by an artificial design which could be a concern for external validity (DeVaus 2001, 77–78; Harris 2008, 168; Sani and Todman, 2006, 35); it would be interesting to see if similar findings emerge from future studies using different research designs. Furthermore, for reasons of feasibility, our studies have relied on small, convenience student samples. It is crucial for subsequent studies to test similar hypotheses using larger non-student probability samples, preferably including older women. Moreover, our samples were uniform in terms of their cultural background. Since evolutionary psychology emphasizes panhuman similarities (Tooby and Cosmides 1995), it is critical for future studies to check if the observed patterns are replicated cross-nationally. Given that, to the best of the authors' knowledge, the aforescribed studies constitute the first attempt to account for female responses to decorative portrayals of women in advertisements through the evolved mechanism of female intrasexual competition, it would be important for future studies on the topic to include additional variables, such as participants' self-perceived attractiveness, self-confidence, general attitude toward advertising and relationship status, that were not examined in this paper. Since we used a single ad

for only one product category with a fictitious brand name, subsequent studies could include additional product categories and existing brands to assess whether familiarity with the category or the brand influences responses to decorative portrayals. Similarly, it could be assessed whether the latter differ with regard to consumers' mood when viewing the ad, which could be influenced by their being motivated to compete. Future studies could also extend beyond retrospective and anticipatory self-referencing, including instructions that encourage thoughts related to one's present self. Furthermore, our studies have solely focused to responses to a single ad depicting a model in a decorative role; we are currently expanding our focus to juxtaposing female attitudes toward ads portraying women in decorative and non-decorative roles. Also, we are planning to examine potential differences between ads that refer to attractiveness-enhancing and non-attractiveness-enhancing products (Hudders et al. 2014).

Despite the limitations, the results of the two experimental studies viewed together have considerable theoretical implications. Although the dominant view of stereotyped portrayals of females in advertising focuses on the indignation of women toward the way they are generally presented in advertising (e.g. Ford and LaTour 1996), thus far there is only limited support of these negative a priori attitudes predicting responses to actual ads (Orth and Holancova 2004; Theodoridis et al. 2013). In this sense, our findings offer an alternative explanation of the mechanism underlying such attitudes. Previous research has provided evidence of women responding both positively and negatively to ads with attractive female models (see Bower 2001 for a review). Although attractiveness is a physical characteristic and decorative portrayal refers to role behaviors, they are both relevant to the understanding of female responses to decorative ads. In our view, this is not ultimately due to both role behaviors and physical characteristics being components of stereotypes (Eisend 2010), but due to attractiveness being 'the currency of female competition' (Campbell 2004, 19). In other words, female consumers use the female model's attractiveness as a 'weapon' in their favor when they think of her as a projection of themselves in the future, but they use this 'weapon' against the woman in the ad when they think of her as a rival to their past selves. In this regard, it is important to note that our findings enhance the understanding of the relationship between self-referencing and role portrayals of women in advertising, which has been addressed only limitedly by prior research (Debevec and Iyer 1988; Morrison and Shaffer 2003). The findings of the two studies also extend prior attempts to account for male reactions to female stereotypes in advertising through the evolutionary principles of mate attraction (Saad 2004) to explain female responses to such portrayals, thus indicating that scientific inquiry on the representation of women in advertising should further capitalize on evolutionary psychology principles in contrast to its yet interpreting this phenomenon from a 'Standard Social Science Model' (Tooby and Cosmides 1995, 23) viewpoint.

From a managerial perspective, the findings of the studies have also important practical implications, as they stress the need for advertising practitioners to closely examine the medium context in which ads showing women in decorative roles are placed. The medium context could metaphorically function as a 'double-edged sword' when it comes to the effectiveness of such advertisements; a context that motivates female consumers to compete and at the same time think about themselves in the future could be seen as an opportunity to elicit favorable attitudes, whereas a context that encourages women to derogate the model in the ad could plausibly undermine its effectiveness. We thus echo Cauberge, Geuens, and De Pelsmacker's (2011, 656) suggestion to advertising professionals to pay attention to the characteristics of the context. Given that female-oriented media are

replete with content focusing on romantic relationships, as well as stories of friendship and animosity with other women, media planning should be closely aligned with creative strategy to ensure visual advertising effectiveness. Especially when it comes to online advertising, this could be achieved through the use of contextual targeting tools that rely on processing keywords or language processing algorithms to semantically analyse the verbal content of webpages. For instance, ads with female models in decorative roles should not be placed next to a website article that encourages women to think about what they have experienced in the past; our research shows that such a context might lead women to engage in competitor derogation and prove detrimental to attitudes toward the ad. For traditional media such as print where contextual targeting is not yet possible, our findings imply that ads should not be pretested outside of context, as De Pelsmacker, Geuens, and Anckaert (2002) also point out. Taking this a step further, our findings also imply that advertisers and advertising agencies need to carefully reconsider creative executions that involve female models in decorative roles in campaigns targeting female audiences, especially in the many cases when controlling for the medium context is not feasible, given that consumer responses seem to be context-sensitive. In such cases, we would recommend that they use a less risky approach. As a concluding remark, we would like to stress the fact that the present paper constitutes, to our knowledge, the first attempt to account for female consumers' responses to advertisements depicting other women from a female competition standpoint. In our view, the fact that advertising research has thus far omitted to address such a possibility can be explained by the fact that female competition is a relatively new topic; after all, it is only fairly recently that publications on this matter have appeared in the marketing literature. Nonetheless, it could also be the case that researchers are reluctant to touch this controversial issue, which has not ceased to be a 'politically taboo subject' even a decade after Campbell (2004, 23) suggested that this was the case in the past. Female intrasexual competition should be neither a priori dismissed as a 'misogynistic' or 'demeaning' idea nor in any way misinterpreted to demean women (see Welling and Nicolas 2015 for a discussion on the latter). Given the growing body of empirical evidence supporting the existence of such a mechanism, the possibility of its underlying diverse aspects of consumer behavior merits to be tested. It remains to be seen whether further studies in this nascent research area will support or challenge the notion of female competition.

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Notes

1. Evolutionary psychology as a paradigm has received substantial criticism in terms of its explanatory power (e.g. Eagly 1997; Levy 2004; Panksepp and Panksepp 2000), the testability of its hypotheses (see Holcomb 1998; Ketelaar and Ellis 2000), and even the political views of its proponents (see Tybur, Miller, and Gangestad 2007). Given that a detailed discussion of the controversy and criticisms surrounding evolutionary psychology is beyond the scope of this paper, interested readers are encouraged to consult Confer et al. (2010), Smith, Mulder, and Hill (2001) and Welling and Nicolas (2015).

2. To explain this ‘paradoxical evidence’ (Plakoyiannaki et al. 2008, 104), one could argue that female models are used so as to function as role models for the target audience (Forbes et al. 2004). It has inadvertently been pointed out that such decisions are made by advertising executives who are predominantly male (McDonagh and Prothero 1997, 365); advertising has been thus seen to propagate the aesthetic of the ‘white male middle-class heterosexual’ (Stern 1999, 8), thus operating as a ‘distorted mirror’ (Pollay 1986, 18) of society, which in turn produces a number of negative social consequences (Hackley and Kitchen 1999).
3. According to parental investment and sexual selection theory (Trivers 1972), men value traits such as youthfulness and physical attractiveness in their potential mates, whereas women favor mates with a high social status (Buss 1989).
4. Buss (1998) distinguishes between evolved mechanisms and manifest behavior in the domain of sexual selection and argues in favor of formulating relevant hypotheses on the basis of inward psychological mechanisms rather than behaviors, since the latter is limited by numerous constraints.
5. For more detailed reviews of the empirical evidence in support of intrasexual competition among males and females, please see Buss (1998; 2009) and Campbell (2004).
6. Numerous studies in evolutionary psychology have indicated that hormonal fluctuations influence females’ mating preferences (e.g. Anderson et al. 2010; Gangestad et al. 2004); in a meta-analytic study by Gildersleeve, Haselton, and Fales (2014), the existence of context-dependent cycle shifts in women’s mate preferences has been confirmed. Drawing on the fact that mating preferences are thought to drive intrasexual competition (Buss 1988, 1989), it has been suggested that the female ovulatory cycle also affects the latter mechanism (Fisher 2004). Ovulating women have been found to dress so as to impress other women (Durante et al. 2011) and to attempt to improve their social standing with regard to other women by acquiring positional goods (Durante et al. 2014). Although the link between hormonal fluctuations and mating-related behaviors is well established, the ‘ovulatory competition hypothesis’ (i.e. the notion that ovulation intensifies female intrasexual competition) merits further research, as noted by Durante et al. (2014, 35).
7. A pretest (26 female respondents aged 21–25 years) indicated that both scenarios led women to engage in the intended strategies (self-promotion scenario: $M_{\text{self-promotion}} = 5.10$, $M_{\text{competitor derogation}} = 2.67$; competitor derogation scenario: $M_{\text{self-promotion}} = 3.17$, $M_{\text{competitor derogation}} = 5.09$).
8. In the pretest, participants were presented with a list of six candidate product categories (alcoholic beverage, high-end fashion, radio station, website, soft drink, mobile phone) and were asked to rate the image of each product category on a set of 10 seven-point semantic differential scales, derived from Alreck, Settle, and Belch (1982). The product category (radio station) that received an average rating closer to the scale midpoint ($M = 4.03$, $SD = 0.24$) was selected for inclusion in the study. The web radio category was chosen so as to be both familiar and of interest to the participants; recent industry data indicate that young consumers increasingly listen to Internet radio (Edison Research, 2014; Statista, 2015).
9. In the pretest, participants were shown nine mock ads with different pictures and then rated their agreement with two statements regarding each ad (‘The advertisement depicts women in a stereotyped manner’, ‘The advertisement shows women as decorative objects’) on a seven-point Likert scale. The statements were generated on the basis of the previously discussed definition of a stereotypic ad that portrays a woman in a merely decorative role. The mock ad that received the highest rating ($M = 4.84$, $SD = 0.75$) was selected for inclusion in the study. In the pretest, participants were asked to list their thoughts regarding each mock ad and the answers to this open-ended question were coded into positive or negative ad-related, product-related and brand-related thoughts. The findings indicated that they were familiar with the product category (web radio) and that their evaluations of the brand name were generally positive. Their ad-related thoughts regarding the focal stimulus also evidenced that it was perceived as realistic.
10. As a confound check, we inserted the mean score of the items used to assess the degree to which participants considered the ad to portray the female model in a decorative role in an ANCOVA as a covariate (Perdue and Summers 1986); its effect was non-significant ($F(1,59) = 1.69$, $p = 0.199$).
11. Prior to hypothesis testing, to dismiss the possibility of general attitudes toward sex role portrayals in advertising influencing attitude toward the ad, we inserted the former in an ANCOVA as a covariate (Perdue and Summers 1986); its effect was non-significant ($F(1,83) = 0.47$, $p = 0.495$).

References

- Allen, K.R. and M.E. Hauber. 2013. Self-referencing and mate choice among college students: Epiphenomenon or consistent patterns of preference across populations? *Journal of Social, Evolutionary, and Cultural Psychology* 7, no. 2: 163.
- Alreck, P.L., R.B. Settle, and M.A. Belch. 1982. Who responds to "gendered" ads, and how? Masculine brands versus feminine brands. *Journal of Advertising Research* 22, no. 2: 25–32.
- Anderson, U.S., E.F. Perea, D.V. Becker, J.M. Ackerman, J.R. Shapiro, S.L. Neuberg, and D.T. Kenrick. 2010. I only have eyes for you: Ovulation redirects attention (but not memory) to attractive men. *Journal of Experimental Social Psychology* 46, no. 5: 804–8.
- Ashmore, R.D. and F.K. Del Boca. 1981. Conceptual approaches to stereotypes and stereotyping. In *Cognitive processes in stereotyping and intergroup behavior*, ed. D. Hamilton, 1–35. Hillsdale, NJ: Erlbaum.
- Baenninger, M.A., R. Baenninger, and D. Houle. 1993. Attractiveness, attentiveness, and perceived male shortage: Their influence on perceptions of other females. *Ethology and Sociobiology* 14, no. 5: 293–303.
- Bagozzi, R.P. and R. Natarajan. 2000. The year 2000: Looking forward. *Psychology & Marketing* 17, no. 1: 1–11.
- Belch, G.E., M.A. Belch, and A. Villarreal. 1987. Effects of advertising communications: Review of research. In *Research in marketing*, ed. J.H. Sheth. Greenwich, CT: JAI Press.
- Bettinger, C.O. and L. Dawson. 1979. Changing perspectives in advertising: The use of 'liberated' feminine life-style themes. In *Developments in marketing science*, eds. H.S. Geatlow and E.W. Wheatey, 111–4. Coral Gables, FL: Academy of Marketing Science.
- Bissell, K. and A. Rask. 2010. Real women on real beauty: Self-discrepancy, internalisation of the thin ideal, and perceptions of attractiveness and thinness in dove's campaign for real beauty. *International Journal of Advertising* 29, no. 4: 643–68.
- Bower, A.B. 2001. Highly attractive models in advertising and the women who loathe them: The implications of negative affect for spokesperson effectiveness. *Journal of Advertising* 30, no. 3: 51–63.
- Burnkrant, R.E. and H.R. Unnava. 1995. Effects of self-referencing on persuasion. *Journal of Consumer Research* 22, no. 1: 17–26.
- Buss, D.M. 1988. The evolution of human intrasexual competition: Tactics of mate attraction. *Journal of Personality and Social Psychology* 54, no. 4: 616.
- Buss, D.M. 1989. Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences* 12, no. 1: 1–14.
- Buss, D.M. and L.A. Dedden. 1990. Derogation of competitors. *Journal of Social and Personal Relationships* 7, no. 3: 395–422.
- Buss, D.M., R.J. Larsen, D. Westen, and J. Semmelroth. 1992. Sex differences in jealousy: Evolution, physiology, and psychology. *Psychological Science* 3, no. 4: 251–5.
- Buss, D.M. 1992. Mate preference mechanisms: Consequences for partner choice and intrasexual competition. In *The adapted mind: Evolutionary psychology and the generation of culture*, eds. J. Barkow, J. Tooby, and L. Cosmides, 249–66. New York: Oxford University Press.
- Buss, D.M. 1995. Evolutionary psychology: A new paradigm for psychological science. *Psychological Inquiry* 6, no. 1: 1–30.
- Buss, D.M. 1998. Sexual strategies theory: Historical origins and current status. *Journal of Sex Research* 35, no. 1: 19–31.
- Buss, D.M. 2009. How can evolutionary psychology successfully explain personality and individual differences? *Perspectives on Psychological Science* 4, no. 4: 359–66.
- Buss, D.M. and D.P. Schmitt. 2011. Evolutionary psychology and feminism. *Sex Roles* 64, no. 9–10: 768–87.
- Bussey, K. and A. Bandura. 1999. Social cognitive theory of gender development and differentiation. *Psychological Review* 106, no. 4: 676.
- Caballero, M.J., J.R. Lumpkin, and C.S. Madden. 1989. Using physical attractiveness as an advertising tool: An empirical test of the attraction phenomenon. *Journal of Advertising Research* 29, no. 4: 16–22.
- Campbell, A. 2004. Female competition: Causes, constraints, content, and contexts. *Journal of Sex Research* 41, no. 1: 16–26.
- Campbell, L. and C.J. Wilbur. 2009. Are the traits we prefer in potential mates the traits they value in themselves? An analysis of sex differences in the self-concept. *Self and Identity* 8, no. 4: 418–46.

- Carmen, R.A., G. Geher, D.J. Glass, A.E. Guitar, T.L. Grandis, L. Johnsen, M.M. Philip, R.L. Newmark, G.T. Trouton, and B.R. Tauber. 2013. Evolution integrated across all islands of the human behavioral archipelago: All psychology as evolutionary psychology. *EvoS Journal: The Journal of the Evolutionary Studies Consortium* 5, no. 1: 108–26.
- Cauberghe, V., M. Geuens, and P. De Pelsmacker. 2011. Context effects of TV programme-induced interactivity and telepresence on advertising responses. *International Journal of Advertising* 30, no. 4: 641–63.
- Chang, C. 2005. Ad–self–congruency effects: Self–enhancing cognitive and affective mechanisms. *Psychology & Marketing* 22, no. 11: 887–910.
- Christy, T.P. 2006. Females' perceptions of offensive advertising: The importance of values, expectations, and control. *Journal of Current Issues & Research in Advertising* 28, no. 2: 15–32.
- Colarelli, S.M. and J.R. Dettmann. 2003. Intuitive evolutionary perspectives in marketing practices. *Psychology & Marketing* 20, no. 9: 837–65.
- Confer, J.C., J.A. Easton, D.S. Fleischman, C.D. Goetz, D.M. Lewis, C. Perilloux, and D.M. Buss. 2010. Evolutionary psychology: Controversies, questions, prospects, and limitations. *American Psychologist* 65, no. 2: 110.
- Cosmides, L. and J. Tooby. 1994. Beyond intuition and instinct blindness: Toward an evolutionarily rigorous cognitive science. *Cognition* 50, no. 1: 41–77.
- Courtney, A.E. and S.W. Lockeretz. 1971. A woman's place: An analysis of the roles portrayed by women in magazine advertisements. *Journal of Marketing Research* 8, no. 1: 92–5.
- Cox, A. and M. Fisher. 2008. A framework for exploring intrasexual competition. *Journal of Social, Evolutionary, and Cultural Psychology* 2, no. 4: 144.
- Dahlén, M. 2005. The medium as a contextual cue: Effects of creative media choice. *Journal of Advertising* 34, no. 3: 89–98.
- De Pelsmacker, P., M. Geuens, and P. Anckaert. 2002. Media context and advertising effectiveness: The role of context appreciation and context/ad similarity. *Journal of Advertising* 31, no. 2: 49–61.
- Deaux, K. and L.L. Lewis. 1984. Structure of gender stereotypes: Interrelationships among components and gender label. *Journal of Personality and Social Psychology* 46, no. 5: 991.
- Debevec, K. and E. Iyer. 1986. The influence of spokespersons in altering a product's gender image: Implications for advertising effectiveness. *Journal of Advertising* 15, no. 4: 12–20.
- Debevec, K. and E. Iyer. 1988. Self–referencing as a mediator of the effectiveness of sex–role portrayals in advertising. *Psychology & Marketing* 5, no. 1: 71–84.
- Devaus, D. 2001. *Research design in social research*. London: Sage.
- Dimofte, C.V. and R.F. Yalch. 2010. The role of frequency of experience with a product category and temporal orientation in self-referent advertising. *Journal of Consumer Psychology* 20, no. 3: 343–54.
- Duker, J.M. and L.R. Tucker Jr. 1977. “Women's lib-ers” versus independent women: A study of preferences for women's roles in advertisements. *Journal of Marketing Research* 14, no. 4: 469–75.
- Duntley, J.D. and D.M. Buss. 2008. Evolutionary psychology is a metatheory for psychology. *Psychological Inquiry: An International Journal for the Advancement of Psychological Theory* 19, no. 1: 30–4.
- Durante, K.M., V. Griskevicius, S.M. Cantú, and J.A. Simpson. 2014. Money, status, and the ovulatory cycle. *Journal of Marketing Research* 51, no. 1: 27–39.
- Durante, K.M., V. Griskevicius, S.E. Hill, C. Perilloux, and N.P. Li. 2011. Ovulation, female competition, and product choice: Hormonal influences on consumer behavior. *Journal of Consumer Research* 37, no. 6: 921–34.
- Eagly, A.H. 1997. Sex differences in social behavior: Comparing social role theory and evolutionary psychology. *American Psychologist* 52, no. 12: 1380–3.
- Eagly, A.H. and W. Wood. 1999. The origins of sex differences in human behavior: Evolved dispositions versus social roles. *American Psychologist* 54, no. 6: 408.
- Edison Research. 2014. Eight in ten millennials listen to Internet radio. <http://www.edisonresearch.com/eight-in-ten-millennials-listen-to-internet-radio/>.
- Eisend, M. 2010. A meta-analysis of gender roles in advertising. *Journal of the Academy of Marketing Science* 38, no. 4: 418–40.
- Eisend, M., J. Plagemann, and J. Sollwedel. 2014. Gender roles and humor in advertising: The occurrence of stereotyping in humorous and nonhumorous advertising and its consequences for advertising effectiveness. *Journal of Advertising* 43, no. 3: 256–73.

- Escalas, J.E. 2004. Imagine yourself in the product: Mental simulation, narrative transportation, and persuasion. *Journal of Advertising* 33, no. 2: 37–48.
- Feingold, A. 1990. Gender differences in effects of physical attractiveness on romantic attraction: A comparison across five research paradigms. *Journal of Personality and Social Psychology* 59, no. 5: 981.
- Fink, B., D. Klappauf, G. Brewer, and T.K. Shackelford. 2014. Female physical characteristics and intra-sexual competition in women. *Personality and Individual Differences* 58: 138–41.
- Fisher, M.L. 2004. Female intrasexual competition decreases female facial attractiveness. *Proceedings of the Royal Society of London. Series B: Biological Sciences* 271, Suppl. no. 5: S283–5.
- Fisher, M. and A. Cox. 2011. Four strategies used during intrasexual competition for mates. *Personal Relationships* 18, no. 1: 20–38.
- Forbes, G.B., K. Doroszewicz, K. Card, and L. Adams-Curtis. 2004. Association of the thin body ideal, ambivalent sexism, and self-esteem with body acceptance and the preferred body size of college women in Poland and the United States. *Sex Roles* 50, no. 5–6: 331–45.
- Ford, J.B. and M.S. Latour. 1996. Contemporary female perspectives of female role portrayals in advertising. *Journal of Current Issues & Research in Advertising* 18, no. 1: 81–95.
- Furnham, A. and S. Paltzer. 2010. The portrayal of men and women in television advertisements: An updated review of 30 studies published since 2000. *Scandinavian Journal of Psychology* 51, no. 3: 216–36.
- Gangestad, S.W., J.A. Simpson, A.J. Cousins, C.E. Garver-Apgar, and P.N. Christensen. 2004. Women's preferences for male behavioral displays change across the menstrual cycle. *Psychological Science* 15, no. 3: 203–7.
- Garcia, J.R. and G. Saad. 2008. Evolutionary neuromarketing: Darwinizing the neuroimaging paradigm for consumer behavior. *Journal of Consumer Behaviour* 7, no. 4–5: 397–414.
- Geary, D.C. 2000. Evolution and proximate expression of human paternal investment. *Psychological Bulletin* 126, no. 1: 55.
- Gildersleeve, K., M.G. Haselton, and M.R. Fales. 2014. Do women's mate preferences change across the ovulatory cycle? A meta-analytic review. *Psychological Bulletin* 140, no. 5: 1205.
- Gilly, M.C. 1988. Sex roles in advertising: A comparison of television advertisements in Australia, Mexico, and the United States. *The Journal of Marketing* 52, no. 2: 75–85.
- Griskevicius, V., N.J. Goldstein, C.R. Mortensen, J.M. Sundie, R.B. Cialdini, and D.T. Kenrick. 2009. Fear and loving in Las Vegas: Evolution, emotion, and persuasion. *Journal of Marketing Research* 46, no. 3: 384–95.
- Griskevicius, V., J.M. Tybur, S.W. Gangestad, E.F. Perea, J.R. Shapiro, and D.T. Kenrick. 2009. Aggress to impress: Hostility as an evolved context-dependent strategy. *Journal of Personality and Social Psychology* 96, no. 5: 980.
- Gulas, C.S. and K. Mckeage. 2000. Extending social comparison: An examination of the unintended consequences of idealized advertising imagery. *Journal of Advertising* 29, no. 2: 17–28.
- Hackley, C.E. and P.J. Kitchen. 1999. Ethical perspectives on the postmodern communications Leviathan. *Journal of Business Ethics* 20, no. 1: 15–26.
- Harker, M., D. Harker, and S. Svensen. 2005. Attitudes towards gender portrayal in advertising: An Australian perspective. *Journal of Marketing Management* 21, no. 1–2: 251–64.
- Harris, P. 2008. *Designing and reporting experiments in psychology*. New York: Open University Press.
- Hartmann, P. and V. Apaolaza-Ibáñez. 2013. Desert or rain: Standardisation of green advertising versus adaptation to the target audience's natural environment. *European Journal of Marketing* 47, no. 5/6: 917–33.
- Holcomb, H.R. 1998. Testing evolutionary hypotheses. In *Handbook of evolutionary psychology: Ideas, issues, and applications*, eds. C. Crawford and D.R. Krebs, 303–34. Mahwah, NJ: Lawrence Erlbaum.
- Hong, J.W. and G.M. Zinkhan. 1995. Self-concept and advertising effectiveness: The influence of congruency, conspicuousness, and response mode. *Psychology & Marketing* 12, no. 1: 53–77.
- Hudders, L., C. De Backer, M. Fisher, and P. Vyncke. 2014. The rival wears prada: Luxury consumption as a female competition strategy. *Evolutionary Psychology* 12, no. 3: 570–87.
- Jaffe, L.J. and P.D. Berger. 1994. The effect of modern female sex role portrayals on advertising effectiveness. *Journal of Advertising Research* 34, no. 4: 32–42.
- Jones, M.Y., A.J. Stanaland, and B.D. Gelb. 1998. Beefcake and cheesecake: Insights for advertisers. *Journal of Advertising* 27, no. 2: 33–51.

- Ketelaar, T. and B.J. Ellis. 2000. Are evolutionary explanations unfalsifiable? Evolutionary psychology and the Lakatosian philosophy of science. *Psychological Inquiry* 11, no. 1: 1–21.
- Krishnamurthy, P. and M. Sujan. 1999. Retrospection versus anticipation: The role of the ad under retrospective and anticipatory self-referencing. *Journal of Consumer Research* 26, no. 1: 55–69.
- Leavitt, C. 1978. Even housewives prefer working women in TV ads. *Marketing News* 11, no. 23: 10.
- Leenaars, L.S., A.V. Dane, and Z.A. Marini. 2008. Evolutionary perspective on indirect victimization in adolescence: The role of attractiveness, dating and sexual behavior. *Aggressive Behavior* 34, no. 4: 404–15.
- Levy, N. 2004. Evolutionary psychology, human universals, and the standard social science model. *Biology and Philosophy* 19, no. 3: 459–72.
- Lindner, K. 2004. Images of women in general interest and fashion magazine advertisements from 1955 to 2002. *Sex Roles* 51, no. 7–8: 409–21.
- Lundstrom, W.J. and D. Sciglimpaglia. 1977. Sex role portrayals in advertising. *The Journal of Marketing* 41, no. 3: 72–79.
- Lydon, J.E., M. Meana, D. Sepinwall, N. Richards, and S. Mayman. 1999. The commitment calibration hypothesis: When do people devalue attractive alternatives? *Personality and Social Psychology Bulletin* 25, no. 2: 152–61.
- Lyonski, S. and R.W. Pollay. 1990. Advertising sexism is forgiven, but not forgotten: Historical, cross-cultural and individual differences in criticism and purchase boycott intentions. *International Journal of Advertising* 9: 319–31.
- Martin, M.C. and P.F. Kennedy. 1993. Advertising and social comparison: Consequences for female preadolescents and adolescents. *Psychology & Marketing* 10, no. 6: 513–30.
- Martin, M.C. and P.F. Kennedy. 1994. Social comparison and the beauty of advertising models: The role of motives for comparison. In *Advances in consumer research*, eds. C.T. Allen and D. Roedder John, 365–71. Provo, UT: Association for Consumer Research.
- Massar, K., A.P. Buunk, and S. Rempt. 2012. Age differences in women's tendency to gossip are mediated by their mate value. *Personality and Individual Differences* 52, no. 1: 106–9.
- McDonagh, P. and A. Prothero. 1997. Leap-frog marketing: The contribution of ecofeminist thought to the world of patriarchal marketing. *Marketing Intelligence & Planning* 15, no. 7: 361–8.
- Mitchell, A.A. and J.C. Olson. 1981. Are product attribute beliefs the only mediator of advertising effects on brand attitude? *Journal of Marketing Research* 18, no. 3: 318–32.
- Mitchell, P.C. and W. Taylor. 1990. Polarising trends in female role portrayals in UK advertising. *European Journal of Marketing* 24, no. 5: 41–9.
- Morrison, M.M. and D.R. Shaffer. 2003. Gender-role congruence and self-referencing as determinants of advertising effectiveness. *Sex Roles* 49, no. 5–6: 265–75.
- Orth, U.R. and D. Holancova. 2004. Men's and women's responses to sex role portrayals in advertisements. *International Journal of Research in Marketing* 21, no. 1: 77–88.
- Orth, U.R., K. Malkewitz, and C. Bee. 2010. Gender and personality drivers of consumer mixed emotional response to advertising. *Journal of Current Issues & Research in Advertising* 32, no. 1: 69–80.
- Panksepp, J. and J.B. Panksepp. 2000. The seven sins of evolutionary psychology. *Evolution and Cognition* 6, no. 2: 108–31.
- Pedhazur, E.J. and L.P. Schmelkin. 1991. *Measurement, design, and analysis: An integrated approach*. New York, NY: Psychology Press.
- Perdue, B.C. and J.O. Summers. 1986. Checking the success of manipulations in marketing experiments. *Journal of Marketing Research* 23, no. 4: 317–26.
- Piccoli, V., F. Foroni, and A. Carnaghi. 2013. Comparing group dehumanization and intra-sexual competition among normally ovulating women and hormonal contraceptive users. *Personality & Social Psychology Bulletin* 39, no. 12: 1600–9.
- Plakoyiannaki, E., K. Mathioudaki, P. Dimitratos, and Y. Zotos. 2008. Images of women in online advertisements of global products: Does sexism exist? *Journal of Business Ethics* 83, no. 1: 101–12.
- Plakoyiannaki, E. and Y. Zotos. 2009. Female role stereotypes in print advertising: Identifying associations with magazine and product categories. *European Journal of Marketing* 43, no. 11–12: 1411–34.
- Pollay, R.W. 1986. The distorted mirror: Reflections on the unintended consequences of advertising. *Journal of Marketing* 50, no. 2: 18.

- Richins, M.L. 1991. Social comparison and the idealized images of advertising. *Journal of Consumer Research* 18, no. 1: 71–83.
- Rouner, D., M.D. Slater, and M. Domenech-Rodriguez. 2003. Adolescent evaluation of gender role and sexual imagery in television advertisements. *Journal of Broadcasting & Electronic Media* 47, no. 3: 435–54.
- Saad, G. 2004. Applying evolutionary psychology in understanding the representation of women in advertisements. *Psychology & Marketing* 21, no. 8: 593–612.
- Saad, G. and T. Gill. 2000. Applications of evolutionary psychology in marketing. *Psychology and Marketing* 17, no. 12: 1005–34.
- Sani, F. and J.B. Todman. 2006. *Experimental design and statistics for psychology: A first course*. Oxford: Blackwell.
- Schmitt, D.P. 2005. Fundamentals of human mating strategies. In *The handbook of evolutionary psychology*, ed. D.M. Buss, 258–91. Hoboken, NJ: John Wiley.
- Schmitt, D.P. and D.M. Buss. 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, no. 6: 1185.
- Sedikides, C. and J.J. Skowronski. 2002. Evolution of the symbolic self: Issues and prospects. In *Handbook of self and identity*, eds. M.R. Leary and J.P. Tangney, 594–609. New York, NY: The Guilford Press.
- Shimp, T. 2008. Ed. *Advertising, promotion, and other aspects of integrated marketing communications*. New York, NY: Harcourt.
- Smith, E.A., M.B. Mulder, and K. Hill. 2001. Controversies in the evolutionary social sciences: A guide for the perplexed. *Trends in Ecology & Evolution* 16, no. 3: 128–35.
- Statista. 2015. Share of individuals listening to web radio on the internet in selected European countries in 2014. <http://www.statista.com/statistics/386341/online-web-radio-consumption-in-european-countries/>.
- Stern, B.B. 1999. Gender and multicultural issues in advertising: Stages on the research highway. *Journal of Advertising* 28, no. 1: 1–9.
- Sugiyama, L.S. 2005. Physical attractiveness in adaptationist perspective. In *The handbook of evolutionary psychology*, ed. D.M. Buss, 292–343. Hoboken, NJ: John Wiley.
- Taylor, C.R., S. Landreth, and H.-K. Bang. 2005. Asian Americans in magazine advertising: Portrayals of the “model minority.” *Journal of Macromarketing* 25, no. 2: 163–74.
- Theodoridis, P.K., A.G. Kyrousi, A.Y. Zotou, and G.G. Panigyrakis. 2013. Male and female attitudes towards stereotypical advertisements: A paired country investigation. *Corporate Communications: An International Journal* 18, no. 1: 135–60.
- Tooby, J. and L. Cosmides. 1992. The psychological foundations of culture. In *The adapted mind: Evolutionary psychology and the generation of culture*, eds. J. Barkow, L. Cosmides, and J. Tooby, 19–136. New York, NY: Oxford University Press.
- Tooby, J. and L. Cosmides. 1995. The psychological foundations of culture. In *The adapted mind: Evolutionary psychology and the generation of culture*, eds. J. Barkow, L. Cosmides, and J. Tooby, 19–136. New York: Oxford University Press.
- Trivers, R.L. 1972. Parental investment and sexual selection. In *Sexual selection and the descent of man*, ed. B. Campbell, 136–79. Chicago, IL: Aldine.
- Tybur, J.M., G.F. Miller, and S.W. Gangestad. 2007. Testing the controversy. *Human Nature* 18, no. 4: 313–28.
- Vaillancourt, T. 2013. Do human females use indirect aggression as an intrasexual competition strategy? *Philosophical Transactions of the Royal Society B: Biological Sciences* 368, no. 1631: 80–7.
- Van Reijmersdal, E., E. Smit, and P. Neijens. 2010. How media factors affect audience responses to brand placement. *International Journal of Advertising* 29, no. 2: 279–301.
- Van Vugt, M., D. De Cremer, and D.P. Janssen. 2007. Gender differences in cooperation and competition the male-warrior hypothesis. *Psychological Science* 18, no. 1: 19–23.
- Vantomme, D., M. Geuens, and S. Dewitte. 2005. How to portray men and women in advertisements? Explicit and implicit evaluations of ads depicting different gender roles. <https://lirias.kuleuven.be/bitstream/123456789/122707/1/0536.pdf>
- Wang, Y. and V. Griskevicius. 2014. Conspicuous consumption, relationships, and rivals: Women’s luxury products as signals to other women. *Journal of Consumer Research* 40, no. 5: 834–54.

- Welling, L.L. and S.C. Nicolas. 2015. The Darwinian mystique? Synthesizing evolutionary psychology and feminism. In *Evolutionary perspectives on social psychology*, eds. V. Zeigler-Hill, L.L.M. Welling, and T. Shackelford, 203–14. Cham: Springer.
- Whipple, T.W. and A.E. Courtney. 1985. Female role portrayals in advertising and communication effectiveness: A review. *Journal of Advertising* 14, no. 3: 4–17.
- Williams, E.F. and M. Steffel. 2014. Double standards in the use of enhancing products by self and others. *Journal of Consumer Research* 41, no. 2: 506–25.
- Wilson, M. and M. Daly. 1985. Competitiveness, risk taking, and violence: The young male syndrome. *Ethology and Sociobiology* 6, no. 1: 59–73.
- Wilson, D.S., and R. O’Gorman. 2003. Emotions and actions associated with norm-breaking events. *Human Nature* 14, no. 3: 277–304.
- Wolin, L.D. 2003. Gender issues in advertising – an oversight synthesis of research: 1970–2002. *Journal of Advertising Research* 43, no. 1: 111–29.
- Wood, W. and A.H. Eagly. 2002. A cross-cultural analysis of the behavior of women and men: Implications for the origins of sex differences. *Psychological Bulletin* 128, no. 5: 699.
- Zimmerman, A. and J. Dahlberg. 2008. The sexual objectification of women in advertising: A contemporary cultural perspective. *Journal of Advertising Research* 48, no. 1: 71.
- Zotos, Y.C. and S. Lysonski. 1994. Gender representations: The case of Greek magazine advertisements. *Journal of Euromarketing* 3, no. 2: 27–47.

Appendix 1. Scenarios – Study 1

Scenario 1 (Self-promotion)

Last night, I went to this party that my friend had been organizing for ages. The minute I walked in, I saw that this handsome guy that was in one of my classes was also there. I don’t really know him, but he seems smart and funny and he is so good-looking that heads turn when he passes by. He was sitting alone, looking around and I guess that he looked a little bored. Maybe he didn’t know any of the people there. I realized that a lot of other girls were checking him out. I knew that it wouldn’t be long until any of them tried to attract his attention. So, I quickly made up my mind to go and talk to him. As I was walking across the room, I kept thinking about what to say to him to set myself apart in his eyes.

Scenario 2 (Competitor derogation)

Last night, I went to this party that my friend had been organizing for ages. I found myself standing next to this handsome guy and soon we started talking. I realized that he was not only good-looking, but also very smart and funny and, to be honest, I liked him a lot. We had been talking for more than an hour when I realized I hadn’t yet got a drink, so I just went across to the bar to get one. Of course, the bar was crowded and it took me a few minutes to get my drink. As I was walking back, I saw him talking to this other girl, one of my classmates. She is this really annoying and unlikeable type, all full of herself. The minute I got there, someone approached her, telling her to move her car because it was blocking the entrance and she left in a hurry. So, I found myself again alone with the guy thinking about what to say to him.

Appendix 2. Ad stimulus – Studies 1 and 2



Appendix 3. Stories – Study 2

Story 1 (Neutral motivation)

Lately, I think I have trouble focusing on something for more than a few minutes. It's not just studying, although sometimes I can't read more than a few sentences without my mind drifting away or without getting up to have a snack. Thinking back, I think that sometimes I can't watch a whole movie without pausing. I find it hard to concentrate on anything and, because of this, I constantly forget where I put stuff. I keep looking for my keys and last week, I was under the wrong impression that I had lost my wallet. I went shopping in the afternoon and I took out my wallet in order to pay. I clearly remember putting it back and then walking home, thinking about all sorts of stuff on the way. It was not until the following morning that I saw that my wallet was not in my handbag. I started looking everywhere, even in sock drawers. I had turned the whole apartment upside down when I opened the fridge to get a glass of water and I saw my wallet there. I don't really remember how or when I put it there, and I am a little worried about this. What do you think I should do?

Story 2 (Competitive motivation)

From the first time I saw P., I knew that he was not like other guys. We first met at a big party and we found ourselves sitting next to each other and started talking. I could easily tell he liked me. At some point, I got up to get a drink and when I came back, he wasn't there. I asked my close friends but they didn't seem to know him. A month passed by and I was still thinking about him. During an evening out with my friend, I saw him across the room hanging out with a group of guys and girls, but it was too crowded and he didn't notice me. Fortunately, a few minutes later, my friend and I managed to move closer. But before I had a chance to say anything to him, one of the girls in his group started dancing and flirting with him in a very obvious way. I instantly recognized her, we were attending a couple of classes together. I asked around to find out whether they were a couple and apparently they are not, though someone said that there might be something there. My friend says that we should go to that place again and that I should talk to him and tell him how I feel about him before something happens with this other girl. What do you think I should do?

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