

Gender-related reactions to gratuitous sex appeals in advertising

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Abstract

This research investigates differences and similarities between men and women in their spontaneous reactions to gratuitous sexual appeals in advertising. Earlier research suggests that both males and females will react negatively to such ads because of perceptions of unethicality, manipulateness, etc. However, we hypothesize and find that, under the sort of constrained processing conditions that allow the elicitation of spontaneous, gut-level reactions, men on average will exhibit a more positive attitudinal response to gratuitous sex appeals than women (Experiments 1 and 2). Experiment 3 then provides support for the underlying process – and also demonstrates intragender variation—by showing that women with more liberal attitudes to sex per se react in a manner very similar to men; namely, they report more liking for a sexual ad than a nonsexual ad.

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Although the use of sex in advertising is extremely common (Duncan, 2002), surprisingly little theoretical research has been undertaken by consumer scientists in this area. As Reichert (2002, p. 269) states in a recent review, “it is unfortunate that understanding of such a ubiquitous appeal as sex in advertising has not progressed further...” In this paper, we aim to partially address this gap by examining gender-based reactions to sex appeals in advertising, with regard to both differences and similarities in the way men and women spontaneously react to such ads. From a theoretical perspective, this focus derives from the existing sex research in psychology, a substantial portion of which has examined the influence of gender in sexual attitudes and behavior. From a practical perspective, such an exploration carries obvious implications for managers wishing to understand when and why the use of sex appeals might be effective across gender-defined segments.

Although there are many aspects of sex in advertising that could be of interest, we circumscribe our investigation along

two dimensions: (a) We focus on reactions to gratuitous sex appeals; and (b) we examine processing of such ads under constrained processing conditions. The rationale for focusing on gratuitous sexual appeals is a practical one. Ads are increasingly making use of nonsubtle, gratuitous sexual content—namely, sexual material (e.g., images) that many are likely to regard as being unnecessarily explicit, a perception that is heightened when the image is also irrelevant to the advertised product. For example, Toyo Tires used a nude female model crouched on all fours with the tagline “Tires that Fit You” in a recent print ad campaign. In another example, an ad for M7, a new fragrance from Yves Saint Laurent, featured full frontal male nudity. It is clearly of interest to both the manager and the policy maker to understand whether and how consumers are influenced by such tactics. Our focus on low-capacity processing, on the other hand, stems from both managerial and theoretical reasons. From a practical perspective, various advertising scholars (e.g., Kassarian, 1978; Sengupta & Gorn, 2002) have made a strong case that consumers typically process ads in an extremely low-involved, cursory manner—a type of processing that can be replicated in the laboratory by imposing a high load during ad exposure (e.g., Drolet & Aaker, 2002; Shiv & Fedorikhin, 1999). From a theoretical point of view, the extant psychology literature on reactions to sexual stimuli suggests that gender differences in the processing of these stimuli are

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based on people's innate, gut-level affective responses. Such responses are more likely to emerge under reduced cognitive capacity—for instance, of the sort that prevails under a high level of cognitive load.

In sum, this research investigates gender-based reactions to the use of gratuitous sexual appeals in advertising, under constrained processing capacity. Building on and combining theoretical perspectives from the psychology literature on gender differences in sexual attitudes, as well as the extant advertising literature on sex appeals, we predict and show (Experiments 1 and 2) that men on average will exhibit a more positive spontaneous reaction to gratuitous sex appeals than women. We posit that this difference emerges due to more positive attitudes toward sex per se for men as compared to women. Experiment 3 then provides support for this underlying process—and also demonstrates intragender variation – by showing that women with more positive attitudes to sex react in a manner very similar to men; namely, they report more liking for a sex-based ad than a nonsexual ad.

Conceptual background

Although there have been various inquiries into the effects of sex in advertising (Alexander & Judd, 1978; Bello, Pitz, & Etzel, 1983; Steadman, 1969; etc.), comparatively little work has directly addressed the question at the heart of the current investigation; namely, how do men and women react to the *gratuitous* use of sexual images in advertising (i.e., when the sexual image is either unnecessarily explicit, and/or has little to do with the product being advertised)? The research that does exist suggests that both men and women respond negatively to such advertising. For instance, an informative study by Peterson and Kerin (1977) examined reactions to ads featuring a female model. The relative state of undress of the model was varied across three different conditions, labeled “nude model,” “seductive model,” “demure model.” A product-only condition was also used. The advertised product was either a body oil (sex relevant) or a ratchet set (sex irrelevant). The authors found that whereas the seductive - relevant ad received the highest ratings in terms of ad appeal for both men and women, the nude - irrelevant combination (i.e., the most gratuitous use of sex) was rated significantly lower by both sexes. The authors concluded that the efficacy of sexually stimulating material in advertising is significantly influenced by its appropriateness, and that both males and females dislike ads in which the sexual image “only serves a titillating function” (for a conceptual replication using a male model, see Simpson, Horton, & Brown, 1996).

Research by LaTour and his colleagues provides an indication as to why such gratuitous uses of sex and nudity might be ill-received by viewers. LaTour and Henthorne (1994; see also LaTour & Henthorne, 2003) found that an ad for jeans featuring a strongly explicit sexual image (partially nude male and female in a sexually suggestive embrace) versus a more demure ad (fully clothed couple holding hands) was regarded by both men and women as being unethical and unfair. Clearly, such a perception will negatively influence

overall evaluations of the advertising for both males and females. Findings from another investigation (Mittal & Lassar, 2000) also provided support for this view. This study examined reactions to an ad for a perfume, featuring overt, explicit sexual content (a couple shown having sex, accompanied by a highly suggestive voiceover). In comparison to another ad featuring much milder content (only an attractive female model, and a voiceover with very indirect innuendo), both men and women found the explicitly sexual ad unethical and objectionable and reported equivalently poor attitudes toward the ad.

Collectively, these findings suggest that the gratuitous use of sexual images in advertising, because it is viewed as being unethical and unfair, will induce poor ad attitudes in both men and women. We note further that such a thesis is consistent with the influential persuasion knowledge model developed by Friestad and Wright (1994; Main, Dahl, & Darke, 2007), which posits that consumers in today's world possess a substantial amount of knowledge about the various persuasive tactics employed by marketers, and therefore draw negative inferences about tactics that are perceived to be manipulative or inappropriate.

However, although the premise that gratuitous sexual appeals yield negative reactions in men and women because of perceptions of unethicallity and manipulativenness seems logical, it also presupposes a deliberative, cognitive mechanism. Specifically, the process of judging whether a persuasive message violates ethical norms (en route to forming an attitude toward the message) typically requires a fair degree of cognitive effort (cf. Campbell & Kirmani, 2000). It should be recognized, however, that most consumers do not spend much time or effort in viewing an ad (Peracchio & Luna, 2006; Sengupta & Gorn, 2002). Indeed, it is estimated that only 20% of print ads are read even a little, and very few are read in a comprehensive fashion (Burnett & Moriarty, 1998). It is important therefore to examine gender-based reactions to inappropriate sex appeals under “thin slice” processing (Ambady, Bernieri, & Richeson, 2000; Ambady, Krabbenhoft, & Hogan, 2006), such as when consumers view the ad under constrained cognitive capacity.

In addition to its practical utility, examining reactions to sex-based advertising under constrained capacity conditions is informative from a theoretical perspective as well because such conditions provide insights into immediate, nondeliberative affective reactions (Shiv & Fedorikhin, 1999). An inquiry of this nature is of particular relevance because, as we elaborate subsequently, the existing psychology literature on sexual attitudes and behavior would suggest that meaningful gender differences to sexual stimuli should be obtained under conditions in which spontaneous affective reactions (rather than deliberate cognitions) are the key driver of attitudes (e.g., Griffit & Kaiser, 1978; Malamuth, 1996).

Gender differences in sexual attitudes

The case for a gender difference in spontaneous reactions to sexually themed advertising is based on the premise that men,

on average, possess more positive attitudes toward sex itself than women. Much empirical evidence has accumulated in support of this proposition, on a variety of different dependent variables, such as spontaneous thoughts about sex, desired frequency of intercourse, initiating versus refusing sex, frequency and variety of sexual fantasies, etc.—on all of these indicators, men report higher scores than women (for a review, see Baumeister, Catanese, & Vohs, 2001). In particular, men seem to have a substantially greater preference for casual, noninvested sex than women (Oliver & Hyde, 1993; Sprecher, 1989).

Both socialization-based and evolution-based accounts of human sexuality provide support for such a gender difference in sexual attitudes. As pointed out in several scholarly reviews, socialization influences are almost without exception biased toward promoting male sexuality but undermining female sexuality (Baumeister & Twenge, 2002; Schwartz & Rutter, 1998). For instance, Schwartz and Rutter (1998) argue that the greater frequency of masturbation for men versus women could at least partly be driven by greater parental discouragement and condemnation of this practice for daughters than sons. Peers are another significant influence accentuating male sexuality while undermining female sexual attitudes (Coleman, 1961; for a discussion of these and other socialization influences, such as religious and governmental institutions, see reviews by Baumeister & Twenge, 2002; Schwartz & Rutter, 1998).

An evolutionary account of sexual attitudes provides a similar perspective. Briefly, the evolutionary view is based on the model of differential parental investment, which argues that because females in the human species have to invest far greater resources to produce offspring than men do, they will tend to be correspondingly more selective in their choice of sexual partners (Buss, 1998; Trivers, 1972). Rather than engaging in casual sex with a large number of men, they will try to select mates who are likely to commit long-term resources to help with offspring nurturing. Men, on the other hand, benefit reproductively by taking advantage of opportunities to engage in sexual intercourse with a large number of females, with little regard to long-term consequences. This account thus posits that evolution has produced an urge toward (aversion from) casual, noninvested sex in men (women), a proposition that has received substantial empirical support (Clark & Hatfield, 1989; Herold & Mewhinney, 1993).

It is important to keep in mind, of course, that this thesis only argues for mean differences between men and women; thus, as even evolutionary scientists have noted (Buss, 2004; Hrdy, 1999), and as we argue in a subsequent section, it would be completely inaccurate to infer that all women hold aversive attitudes toward noninvested sex. With that caveat in place, we turn to examining some important implications of the average gender difference in sexual attitudes.

Gender differences in attitudes toward sexual stimuli

Of importance to the current research, there is reason to believe that the difference between male and female sexual

attitudes should translate to a gender difference in spontaneous reactions toward sex-related stimuli. A socialization perspective of human sexuality, for instance, holds that sexual stimuli (such as visual erotica) get associated with positive or negative affect because of the sexual socialization process, during which boys and girls typically receive differing indirect and direct messages about such stimuli from a variety of sources, including peers, parents, and social institutions (Griffit, 1973; Griffit & Kaiser, 1978). Ultimately, because of repeated and powerful conditioning, attitudes toward sex per se get automatically transferred to sexual stimuli; thus, stimuli such as erotic pictures are likely to induce positive affect in men while inducing negative affect in women (Griffit & Kaiser, 1978).

Evolutionary views offer a similar prediction regarding differences in attitudes toward sexual stimuli. In particular, as cogently argued by Malamuth (1996; see also Saad, 2004), because men are designed by natural selection to be favorably inclined toward casual, noninvested sex, they will exhibit a positive affect/approach response to portrayals of casual sex (e.g., Symons, 1979). Women, on the other hand, have more to lose from engaging in short-term mating; accordingly, they will exhibit a negative affect/avoidance reaction to portrayals of casual sex (Faust, 1980). A related difference, stemming again from the greater risk borne by women compared to men, is that male sexual mechanisms will lead them to value sex in itself regardless of the context, whereas women will tend to be far more sensitive to thematic elements that inform them as to whether the portrayal of sex is appropriate, such as the emotional nuances in the sexual context (Abelson, Cohen, Heaton, & Suder, 1971; Geer & McGlone, 1990).

These theoretical accounts of a gender difference in spontaneous affect generated by sexually explicit images have received some empirical support as well. In particular, several studies have found that heterosexual men react with more positive affect (and less negative affect) than heterosexual women do to explicit visual images of male–female couples engaged in sexual acts devoid of any context suggesting a broader relationship (Abelson et al., 1971; Griffit, 1973). A study by Griffit and Kaiser (1978) is relevant in this regard. Men and women in this study performed repeated trials of a stimulus discrimination task (involving size discrimination between different geometric shapes). On each trial, their choice determined whether they were then immediately exposed to a nonerotic or an erotic slide (that had been pretested to be equally sexually arousing for men and women). Affective responses to the slides were also obtained. Results showed that men reported greater positive affect and less negative affect to the erotic slides than women. Further, the pattern of choice responses on the discrimination task showed that women sought to consciously avoid exposure to the erotic slides whereas men sought to approach such exposure. In other words, erotica functioned as reinforcement for the men but as a punishment for the women.

The literature on human sexuality thus offers sufficient grounds to conclude that, because of a gender difference in

attitudes toward sex per se, exposure to sexually explicit stimuli that portray sex as an end in itself (i.e., without any contextual justification) should induce a more positive spontaneous reaction in men as compared to women; indeed, the evidence suggests that women actually exhibit a spontaneous negative response to such stimuli (e.g., [Griffit & Kaiser, 1978](#)). Building on this view, we propose that ads featuring gratuitous sexual images (for example, see Appendix A) will elicit a positive affective reaction from men but a negative reaction from women. Therefore, under conditions where the spontaneous affective reaction, rather than a deliberate cognitive response, is the critical determinant of attitudes (e.g., when processing under a high cognitive load), men will report a more positive attitude to an ad featuring a gratuitous sexual image than a nonsexual image. The reverse pattern should obtain for women; namely, a better attitude toward the nonsexual ad than the sexual ad.

Individual differences in women's attitudes

Although the discussion above suggests that women on average will exhibit a poorer attitude toward ads containing gratuitous sexual (vs. nonsexual) images, it would be erroneous to conclude that such a finding would be obtained for all women. On the contrary, our underlying logic allows for the possibility that some women will actually prefer sex-based advertising. In particular, our conceptualization is based on the premise that spontaneous reactions toward gratuitous sex-based ads are primarily driven by intrinsic attitudes toward sex per se. Although findings in the sex literature do indicate that on average women have less positive attitudes toward sex than men do, this still leaves open the possibility that some women may have highly positive sexual attitudes. Indeed, even evolutionary perspectives of sexuality, rather than advocating gender-based determinism, allow for individual differences in attitudes toward sex, based on various factors such as childhood experiences, control of material resources, physical attractiveness, etc. (e.g., [Berry, 2000](#); [Gangestad & Simpson, 2000](#)). Several findings in the sex literature are consistent with this notion of individual differences in sexual attitudes. For instance, [Simpson and Gangestad \(1991\)](#) found that both men and women exhibited considerable variation on a scale measuring sociosexual attitudes. Further, those who scored higher on this scale—women as well as men—were significantly more likely to engage in sex at an earlier point in their relationship and also to engage in sex with a third person while in a steady relationship. Similarly, several other types of individual differences have been identified in the area of sex research, such as sex guilt ([Mosher, 1966](#)), erotophobia–erotophilia ([Fisher, Byrne, White, & Kelley, 1988](#)), and sexual liberalism ([Mercer & Kohn, 1979](#)). In each case, the evidence indicates not only that these trait differences are useful predictors of a variety of sex-related behaviors, but also that there is considerable variation in women's sexual attitudes as manifested by scores on these scales.

Given the existence of such individual differences and in light of our overarching premise that the spontaneous affect

evoked by sexually explicit ads is dictated by attitudes toward sex per se, we argue that not all women will respond negatively to the gratuitous use of sex in advertising; rather, women with relatively positive attitudes toward sex will react positively to such ads. In particular, we chose to examine the effect of sexual liberalism, an individual difference tapping into liberal versus conservative attitudes to sex, which has been found to predict a variety of sexual attitudes and behaviors ([Mercer & Kohn, 1979](#); [Wallace & Wehmer, 1972](#)). We hypothesize that, under constrained processing conditions, women with relatively high scores on this variable (sexual liberals) will react positively toward an ad featuring a gratuitous sexual appeal, evaluating it more highly than an equivalent ad with a nonsexual appeal. Women with relatively low scores on this variable (sexual conservatives), on the other hand, should react negatively toward the gratuitous sex appeal and report a poorer attitude toward such an ad than an equivalent ad with a nonsexual appeal. Support for these predictions (examined in Experiment 3) will serve as additional evidence for the key premise underlying our conceptualization; namely, that it is attitudes toward sex per se that drive ad attitudes for gratuitous sex appeals; further, it will bolster the premise that attitudes toward sexual stimuli are not solely determined by gender.

Experiment 1

In addition to being documented in prior literature ([Mittal & Lassar, 2000](#); [Peterson & Kerin, 1977](#)), the premise that both men and women dislike the gratuitous use of sex in advertising under default conditions (i.e., unconstrained capacity) received support in our preliminary data collection: Men and women were exposed to various sexually explicit real print ads and reported uniformly negative reactions (please contact the authors for details of this pilot test). Experiment 1 was run to investigate whether this similarity persisted even under conditions of high cognitive load, where a gut-level affective response is expected to dominate more deliberative cognitive reactions (see [Shiv & Fedorikhin, 1999](#); [Campbell & Kirmani, 2000](#)).

Pretests

As conceptualized in this research and elsewhere ([Gould, 1994](#); [Reichert, 2003](#); [Rotfeld, 2003](#)), gratuitousness of a sexual appeal can stem both from its explicitness as well as its irrelevance. To create a strong induction of gratuitousness, it was deemed desirable to incorporate both these dimensions into the sex appeal that was used in the main study. A pretest was carried out with 18 participants (50% female) to check that the sexual image to be used in the target ad was perceived as being explicitly sexual and also irrelevant to the advertised product (watches). Explicitness was assessed by two 11-point scales anchored by not at all sexy/erotic versus very sexy/erotic ($r = .85$, $p < .001$). Relevance was measured by asking participants to rate the image on two 11-point scales anchored by irrelevant/relevant to watches and not

informative/informative about the advertised product ($r = .68$, $p < .001$). Participants rated several different sexual images on these two sets of scales. The chosen image (Appendix A) rated high on erotic content ($M = 7.72$) and low on relevance to watches ($M = 2.53$). No effect of gender was observed in either case ($ps > .2$).

In addition to identifying an image for use in the sex-based ad, we needed to identify a suitable nonsexual image to be used in the nonsex ad. Although this nonsexual image had to be low in erotic content, equivalence considerations required it to be as irrelevant to the product as the sexual image. The image that was chosen (see Appendix B) consisted of a visual depicting a mountain scene. Prior research on sex appeals has used such landscape scenes in the control/nonsexual conditions (LaTour, 1990; Steadman, 1969). Another set of pretest participants ($n = 15$; eight men, seven women) rated this image for its erotic content and relevance to an ad featuring watches. As desired, this visual image rated lower than the sexual image on erotic content ($M = 2.8$, $t = 5.93$, $p < .001$) but was rated equally irrelevant to watches ($M = 3.13$, $t < 1$). Further, no gender differences were observed on either rating ($ps > .2$ for both gender effects).

Main study: Design and procedure

The study used a 2 (Gender: men vs. women) \times 2 (Ad Type: sexual vs. nonsexual appeal) between-subjects design. Undergraduate students were recruited to participate in the experiment in exchange for partial class credit. Participants in all four experimental conditions ($n = 70$; 51% male) were subjected to a high cognitive load. Further, to replicate prior findings showing that, under unconstrained conditions, both men and women dislike the gratuitous use of sex appeals, data were simultaneously collected for two control conditions, in which men and women ($n = 37$; 49% male) reacted to the sexual appeal under low cognitive load. These two conditions are described in more detail subsequently.

In the four experimental conditions, participants were first given a booklet containing the cognitive load manipulation. They were told that one of the goals of the experimental session was to assess how consumers' memories affect their processing of advertising information; hence, as a test of memory, they were being asked to memorize a 10-digit number before being shown a few ads. This induction has been shown to produce a high level of cognitive load (Gilbert, Pelham, & Krull, 1988; Shiv & Fedorikhin, 1999). The number was presented on the next page of the booklet. Participants were told that they would later be asked to recall this number. This first booklet was then taken away and a second booklet was distributed. This booklet contained three print ads; with the target ad being the second. The first page of the booklet informed participants that they would now see print ads for several different products. Further, they were reminded of the earlier number–memory task and were informed that they would be asked to recall the number after they had finished looking at the ads. Each of the three ads consisted of a pictorial image as well as some product

specifications. For instance, the target ad for Chaumet watches featured the chosen image (sexual vs. nonsexual) as well as product details (e.g., bracelet has a push-button clasp for added security, water resistance to 300 ft, precise Swiss quartz movement). Exposure time for each ad (20 s) was controlled by the experimenter to guard against the possibility that the proposed gender differences in ad reactions were not obtained simply due to differences in the extent of ad perusal.

After participants had looked at the three ads, the second booklet was taken away, and a third booklet consisting of the study questionnaire was distributed. Participants were first asked to complete the number–memory task by writing down the number that they had earlier been asked to memorize. They were then asked to report attitudes toward the ad for the first filler product, followed by the key questions for the target ad for Chaumet watches. Ad attitudes were measured on three 7-point scales (1 = *poor/bad/dislike*; 7 = *excellent/good/like*, $\alpha = .94$). Our choice of attitude toward the ad as the key dependent variable in this study followed from a recent review which points out that sexual content in advertising has typically had a far stronger influence on attitudes toward the ad than the brand (Reichert, 2002).

Next, participants completed an open-ended protocol asking for their reactions to the ad. To tap into ad-induced affect, protocol instructions explicitly asked participants to indicate their *feelings* toward the ad. The completed protocols were classified in terms of their valence (positive, negative, or neutral). An example of a positive affective thought is “I enjoyed looking at this ad,” whereas a negative affective reaction is exemplified by “I was shocked by the ad.” Coding was done by two independent coders who arrived at an agreement rate of 84%; disagreements were resolved via discussion.

After filling out a few filler demographic questions, participants then responded to several questions about the picture they had seen in the target ad. It was made clear that all these measures, rather than asking about the picture as part of the ad, referred to evaluations of the *picture* alone. In order, these questions measured liking of the picture (on two 7-point scales: not/very attractive, not/very likable; $r = .87$); its erotic appeal (on two 11-point scales: not/very erotic, not/very sexy; $r = .94$); how arousing it was (on a 7-point scale: not/very arousing); and whether participants thought the picture was more offensive in general to men or women (on a 9-point scale: more offensive to men/women, higher scores = more offensive to women; a separate box allowed participants to report that the picture was not offensive to either gender). Next, as a check on the gender factor, participants were asked to fill out a four-item sex role index (Stern, Barak, & Gould, 1987), asking them how masculine/feminine (1 = *very masculine*; 5 = *very feminine*) they considered themselves to be in terms of their feelings, looks, activities, and interests ($\alpha = .86$). Finally, all participants responded to a probe checking whether they had felt any social pressure to answer any of the questions in a particular way. They were then thanked, debriefed, and dismissed.

Results

The data for the four experimental conditions (all featuring high cognitive load) were analyzed in the context of a 2 (Gender: men vs. women) × 2 (Ad type: sexual vs. nonsexual) ANOVA. First, as a manipulation check on the gender factor, we examined participants' scores on the sex–role index, with higher scores indicating more feminine roles. As expected, women scored higher on this index than men, $F(1, 66)=166.09$, $p<.0001$; no other effects were significant (please see Table 1 for all means).

We also checked that there were no major gender differences on three key indices of how the ad pictures were perceived on their own (i.e., not in relation to the picture's use in the ad, but simply as a picture in itself). Only a significant effect of ad type was obtained on the erotic appeal of the picture, $F(1, 66)=112.15$, $p<.001$; the extent to which participants perceived the picture to be relatively more offensive to women versus men, $F(1, 66)=10.95$, $p<.01$; and also the arousal induced by the picture, $F(1, 66)=54.46$, $p<.0001$; in all cases, the sexual image was rated higher than the nonsexual image. Of importance, neither the main effect of gender (all $ps>.16$) nor the interaction of gender and ad type (all $F_s<1$) attained significance on any of these measures. Thus, any gender effects that we obtain on ad attitudes across conditions are unlikely to be due to differential gender-based perceptions along any of these three dimensions.

The key hypothesis in the experimental conditions was that male attitudes toward the target ad would be more positive for the sexual ad than the nonsexual ad, but that women would report better attitudes for the nonsexual ad than the sexual ad. Consistent with this prediction, a main effect of gender on ad attitudes, $F(1, 66)=13.6$, $p<.001$, was qualified by a significant interaction with ad type, $F(1, 66)=22.61$, $p<.001$. For male participants, contrasts then revealed better attitudes for the sexual ad than the nonsexual ad, $F(1, 66)=13.66$,

$p<.001$. Further, and as predicted, women followed the reverse pattern: The nonsexual ad was preferred to the sexual ad, $F(1, 66)=9.24$, $p<.01$. Finally, a direct comparison revealed that men liked the sexual ad more than women did ($F(1, 66)=34.59$, $p<.001$).

Insights into the obtained gender differences in reactions to the sex-based ad were provided by examining open-ended affective reactions to the ad. As described earlier, these protocols were categorized into positive, negative, and neutral affective responses. A valenced affect index was then computed by subtracting negative statements from positive ones. A significant interaction of gender and ad type was obtained on this index, $F(1, 66)=21.91$, $p<.001$. Further, in line with the attitude data, more favorable affect was obtained toward the sexual ad versus the nonsexual ad for men, $F(1, 66)=13.27$, $p<.01$. On the other hand, the pattern of means indicated a more favorable affect index toward the nonsexual ad versus the sexual ad for women, $F(1, 66)=8.93$, $p<.01$.

Finally, an exactly similar pattern of results was obtained on the index of liking of the picture itself (i.e., participants' attitudes toward just the visual image featured in the ad). We expected that men should like the sexual picture more than the nonsexual image, whereas the reverse pattern should obtain for women. In support, a significant interaction of gender and ad type was obtained on the picture liking measure, $F(1, 66)=10.86$, $p<.01$. Contrasts then revealed that male participants liked the sexual image better than the nonsexual image, $F(1, 66)=4.83$, $p<.05$, whereas women followed the reverse pattern, $F(1, 66)=6.05$, $p<.05$.

Ad attitudes in control conditions (Low cognitive load)

Although results from the experimental conditions supported our hypotheses regarding gender differences in processing sex-based appeals under cognitive load, we also sought to replicate earlier results (e.g., Peterson & Kerin, 1977; Simpson et al., 1996) showing that men and women

Table 1
Experiment 1 means

Experimental condition	Dependent variables						
	Sex role rating	Picture offensiveness	Picture eroticism	Picture arousal	Ad attitude	Valenced affect index	Picture liking
Male—load Sex ad	2.07	6.67	9.42	8.67	5.74	.72	5.89
Female—load Sex ad	3.80	6.40	8.63	7.88	3.25	−.69	3.75
Male—load Nonsex ad	2.14	5.67	3.97	4.33	4.22	−.22	4.81
Female—load Nonsex ad	3.81	5.22	3.61	3.44	4.54	.11	5.00
Male—no load Sex ad (control)	2.38	6.78	8.22	7.28	3.91	−.28	5.08
Female—no load Sex ad (control)	3.86	6.71	8.87	7.26	3.79	−.21	3.95

Note. Dependent variables are given in the order in which they appear in the paper (for Tables 1–3).

react similarly to a sex-based appeal under default (i.e., unconstrained) conditions. The two control groups mentioned earlier, in which men and women provided reactions to the sex-based ad under low cognitive load, were used for this purpose. Participants in these two conditions simply had to memorize a 2-digit number before ad exposure, in contrast to the 10-digit number used in the experimental conditions (Shiv & Fedorikhin, 1999).² Of interest, in contrast to the gender difference in ad attitudes obtained in the high-load conditions, no difference was obtained under conditions of low cognitive load, $F(1, 101) < 1$, replicating past results. In other words, removing the constraints on processing resulted in a lowering of male attitudes, $F(1, 101) = 15.02$, $p < .001$, whereas having no effect on females' already low attitudes, $F(1, 101) = 1.26$, $p > .25$.

Discussion

Experiment 1 provided evidence for both gender-based similarities and differences in reactions to the use of gratuitous sex appeals in advertising. Replicating earlier findings, results from the control cells showed that under default conditions (unconstrained capacity), both men and women reacted adversely to such ads, as indicated by similarly poor ad attitudes. The primary focus of the current research, however, lay in examining attitudes resulting from constrained processing of the ad. In accordance with our prediction, results revealed that men reacted much more favorably to the sex-based ad than a nonsexual ad, whereas the opposite pattern was obtained for women. A direct gender comparison for the sex-based ad under high cognitive load confirmed that women reacted less favorably to this ad than men. Further, ancillary analyses on picture liking and our measure of ad-induced affect were consistent with the premise that spontaneous reactions toward the sexual image were substantially less positive for women than men.

Experiment 2 was run to extend these findings along several directions and also to rule out an alternate explanation of the key result that women displayed a relatively negative spontaneous reaction toward the gratuitous sex-based ad than men. Specifically, women might have found the explicit nature of the sex appeal more shocking than men, thus leading them to engage in greater elaboration (in line with findings showing that shock appeals tend to receive more elaboration; Dahl, Frankenberger & Manchanda, 2003). The plausibility of this explanation is heightened by research which has found that women possess a lower threshold for engaging in more

elaborate processing (Meyers-Levy & Sternthal, 1991). Thus, the alternate account for our findings suggests that the cognitive load imposed in this study was not sufficient to impair elaborate cognitive processing for women. They may have reported a lower liking for the sexual ad because they were able to engage in considered deliberations regarding manipulateness, irrelevance, etc., rather than simply reporting their instinctive affective reactions.

Some data from the study provide initial indication that this may not be the case. In particular, under high cognitive load, no gender difference was obtained as to the effort participants reported being able to put into processing the sexual ad ($M_{\text{men}} = 5.53$, $M_{\text{women}} = 5.23$, $F < 1$). This result is inconsistent with the notion that the relatively negative reaction of women (vs. men) was due to greater processing of the target ad.

To provide a stronger refutation of the alternate thesis, however, Experiment 2 examined gender differences in reactions to the sex-based ad under even more impaired processing conditions than in Experiment 1. We expected to replicate our earlier results with women showing relative dislike of the sex-based ad compared to men; however, the alternate possibility is that women also have an instinctive positive reaction to such an ad, and that significantly reducing cognitive capacity would allow this reaction to dominate, without being corrected for by any additional processing.

Experiment 2 also sought to extend our earlier findings along two directions. Because the current research represents a first step toward investigating gender differences in reactions to gratuitous sex appeals, we have focused on relatively extreme cases that combine both explicitness and product irrelevance of the sexual image. However, our theorizing posits that, under a high level of cognitive load, considerations of relevance are unlikely to play a part (Indeed, it is based on this reasoning that we predict that men will react positively toward even an irrelevant sex-based ad, as Experiment 1 finds.) A logical corollary of this argument is that even when the sexual image is relevant to the advertised product, reactions under constrained capacity should be similar to those obtained in Experiment 1; that is, women should still report disliking an ad featuring an explicit sexual image, as compared to men. Experiment 2 seeks to obtain evidence for this hypothesis. Finally, Experiment 2 also extends our earlier findings by including additional dependent variables. Specifically, this study measures attitude toward the brand to check whether the hypothesized effects are obtained for A_{brand} in addition to A_{ad} . We also took measures of attitude ambivalence (cf. Sengupta & Johar, 2002) to rule out the possibility that the predicted gender differences are driven by different levels of conflict experienced while viewing the sex-based ad.

We note here that Experiment 2 was undertaken following useful reviewer feedback on a previous draft; thus, this study was actually the last to be run of the three experiments reported here. However, it has been reported as the second study to best preserve the logical flow of the paper.

² We checked that the cognitive load manipulation worked as intended. This was done by using two indicators: correct recall of the number after ad exposure (higher recall expected for low load—i.e., the smaller number) and amount of effort participants reported being able to put into processing the ads (higher effort expected for low load). Consistent with expectations, low (vs. high cognitive load) produced better recall of the number to be memorized (100% vs. 84%), $F(1, 101) = 6.86$, $p < .05$, and the capacity to process the ad more effortfully (5.94 vs. 5.39), $F(1, 101) = 2.61$, $p < .06$ one-tailed.

Experiment 2

Design and procedure

A 2 (Gender: Men vs. Women) × 2 (Ad type: relevant explicit vs. irrelevant explicit sexual appeal) between-subjects design was used. One hundred seventeen undergraduate students were recruited to participate in the experiment in exchange for partial class credit. All participants were required to process the target ad under significantly constrained conditions.

The procedure used was identical to that in Experiment 1, with a few differences. Of most importance, processing conditions were made substantially more onerous than the high-load condition used in Experiment 1. Following earlier research (cf. Shiv & Fedorikhin, 2002), this was done in two ways: by increasing the amount of cognitive load and by simultaneously reducing the period of stimulus exposure. Instead of being asked to memorize a 10-digit number, participants were asked to memorize a 13-digit number for later recall. Further, ad processing was rendered more difficult by reducing exposure time to each ad to 10 s.

The ad booklet that participants received after the load manipulation was the same as earlier, consisting of two filler ads and the target ad featuring the same explicitly sexual image as before. However, the product featured in the ad was changed depending on whether participants were in the irrelevant condition (product: Chaumet watches) or in the relevant condition (product: Chaumet condoms). An earlier pretest ($n=18$), which used the same measures of relevance employed in Experiment 1 pretesting, had established that the sexual image was rated as being more relevant to condoms ($M=8.86$) than watches ($M=2.53$, $t=9.36$, $p<.001$).

The ad booklet was followed by a booklet containing the study questionnaire. As before, this booklet first required participants to recall the “load” number; of note, only 54.4% of participants were able to recall the entire 13-digit number (compared with 84% recall for the high-load number in Experiment 1). Number recall was followed by the items measuring attitude toward the ad. To measure attitude toward the brand, participants were also asked to report their opinions of the advertised product itself (Chaumet watches/Chaumet condoms) on a two 9-point items (negative/positive, unfavorable/favorable; $r=.86$). Attitude ambivalence was measured by asking participants about their reactions to the ad on a set of three 11-point scales going from 0 (*no indecision/no conflict/completely one-sided reactions*) to 10 (*a lot of indecision/a lot of conflict/completely mixed reactions*; $\alpha=.81$; Priester & Petty, 1996; Sengupta & Johar, 2002). The relevance of the sexual image to the advertised product was subsequently measured on two 11-point items ranging from 1 (*poor fit/irrelevant*) to 11 (*good fit/relevant*; $r=.85$). An additional item then asked for participants’ disagreement with the statement “I think the ad for Chaumet was shocking” (1 = *strongly disagree*; 7 = *strongly agree*). Finally, although some measures from Experiment 1 (such as thought protocols and questions relating to the picture’s offensiveness, erotic appeal, etc.) were dropped

from this study in the interests of time, we retained the measure of the extent to which participants’ reported liking the picture itself.

Results

The data were analyzed in the context of a 2 (Gender: Men vs. Women) × 2 (Ad type: relevant vs. irrelevant explicit sex appeal) ANOVA. As expected, ad type had a significant impact on ratings of picture relevance, with the sexual image being rated more relevant when it featured in the ad for condoms than for watches, $F(1, 113)=72.24$, $p<.0001$. No other effects were significant on this measure ($F_s<1$).

Our key hypothesis was that the target ad featuring an explicit sex appeal should induce less positive reactions in women versus men even under the more constrained processing conditions prevailing in this study. We further predicted that this pattern should hold for both the product-relevant and the product-irrelevant sexual appeal. In support, results revealed only a main effect of gender on ad attitudes, such that women reported relatively unfavorable evaluations compared to men ($F(1, 113)=23.09$, $p<.001$). As predicted, the interaction of gender and ad type was not significant ($F<1$), showing that this pattern held for both the relevant and the irrelevant sexual appeals. Exactly parallel results were obtained on the index of brand attitudes (main effect of gender: $F(1, 113)=14.19$, $p<.001$; interaction $F<1$, *ns*; for means, see Table 2).

Reassuringly, analyses revealed no main or interaction effects on ambivalence produced by the ad (all $F_s<1.42$, $p_s>.20$) nor on how shocking the picture was perceived to be (all $F_s<1$), suggesting that the observed gender differences in ad and brand attitudes were not driven by either of these factors. In contrast, we expected a significant effect of gender on the index of picture liking itself—that is, participants’ attitudes toward the visual image featured in the ad. As in Experiment 1, women should like the sexual picture less than men, irrespective of product relevance. In support, only a main effect of gender was obtained on picture liking ($F(1, 113)=13.42$, $p<.001$; interaction $F<1$, *ns*), paralleling the results reported above for brand and ad attitudes.

Table 2
Experiment 2 means

Experimental condition	Dependent variables					
	Picture relevance	Ad attitude	Brand attitude	Attitude ambivalence	Picture shock	Picture liking
Male	7.69	4.87	5.89	4.53	5.00	5.31
Sex relevant ad						
Female	7.94	3.80	5.08	5.22	5.16	4.50
Sex irrelevant ad						
Male	4.10	4.98	6.29	4.56	5.35	5.56
Sex irrelevant ad						
Female	3.46	3.70	5.26	4.34	5.17	4.53
Sex irrelevant ad						

Note. All conditions in both Experiments 2 and 3 were run under constrained capacity.

Discussion

Results from Experiment 2 provided further support for the hypothesis that, under the type of constrained processing conditions that elicit spontaneous, instinctive reactions, women will evaluate a sexually explicit ad less positively than men. The fact that this study replicated the Experiment 1 high-load findings under even more onerous processing conditions suggests that those earlier findings were not driven by women having engaged in greater ad elaboration than men; had that been the case, one would expect a different pattern of results when conditions were even more inimical to elaboration.

Experiment 2 also extended our earlier findings by examining the role of product relevance of the sexually explicit image. Our conceptualization holds that considerations of relevance are unlikely to hold sway under constrained processing conditions; rather, ad attitudes should be primarily driven by spontaneous affective reactions, which we posit should be less positive for women than men. Consistent with this premise, findings from this study revealed that attitudes produced by a sexually explicit ad were less favorable for women than men, for a product-relevant ad as well as a product-irrelevant ad.

Experiment 3 was run to provide further insights into these results along two major directions. Of most importance, whereas the first two studies found that women on average tend to react negatively toward a gratuitous sex-based appeal, Experiment 3 sought to show that this finding is moderated by systematic individual differences. Such a demonstration, apart from its intrinsic value, would help to provide support for a key premise underlying our theorizing. In particular, our conceptualization regarding spontaneous attitudes toward gratuitous sexual advertising is based on the premise that these ad attitudes are driven by attitudes toward sex *per se*. If this premise is correct, the following hypothesis follows as a logical corollary: Even under impaired processing conditions, women who possess a positive attitude toward sex should react favorably to a gratuitous sex appeal. Women with a less positive attitude toward sex, however, should follow the pattern demonstrated thus far; that is, their spontaneous reactions toward such an ad will tend to be unfavorable.

Experiment 3 investigated these ideas by examining how conservative versus liberal attitudes toward sex (Mercer & Kohn, 1979) influence women's reactions toward an ad featuring a gratuitous sexual appeal (vs. a nonsexual appeal) under conditions of high cognitive load. We predicted a crossover interaction between ad type and sexual attitudes: Women with more liberal (conservative) sexual attitudes should like the sex-based ad more (less) than the nonsexual ad.

The other major addition in Experiment 3 involved a closer examination of the role of affect versus cognition as an influence on ad attitudes. As described in more detail in the procedure section below, the study questionnaire included items tapping into specific affective reactions induced by the ad, as well as more considered cognitive reactions. We predicted that attitudes under load should be driven more by the former than

the latter. Of interest, we also separately examined the effect of positive affective reactions and negative affective reactions. The reason for this more fine-grained investigation stems from existing research in the sex literature, which suggests that positive and negative affect have independent roles to play in reactions toward sexual stimuli. One such study, for instance, which contained independent measures of positive affect and negative affect, found that women with higher sex guilt provided more negative affective reactions to erotic stimuli than women with lower sex guilt; simultaneously, lower sex guilt led to more positive affective reactions than higher sex guilt (Griffit & Kaiser, 1978; see also Malamuth, 1996). Applying these findings to the current experiment, we hypothesized that positive and negative affect would have different roles to play in driving the predicted ad attitudes for sexually liberal versus sexually conservative women. For sexual conservatives, we predicted a poorer attitude toward the sexual ad versus the nonsexual ad because of greater negative affect induced by the sexual ad; we did not expect any differences in positive affect across ad type. For sexual liberals, however, we expected more liking for the sexual ad versus the nonsexual ad because of more positive affect induced by the former; no differences in negative affect were expected in this case.

Experiment 3

Design and procedure

Sixty-seven female students participated in the experiment in exchange for partial class credit. A 2 (Ad type: Sexual vs. Nonsexual appeal) \times 2 (Sexual attitudes: conservative vs. liberal) between-subjects design was used. All four conditions were run under the high cognitive load condition of Experiment 1. Although this experiment primarily focused on women's reactions, follow-up data (discussed subsequently) were also collected on male reactions to provide convergent evidence for the role of inherent sexual attitudes in responses to sex-based advertising.

The procedure followed was very similar to that used in Experiment 1. Participants were first given a 10-digit number to memorize; they were then exposed to the ad booklet in which the target ad was the second of three ads. The sexual ad used in this experiment was the product-irrelevant sexually explicit ad for watches that was used in Experiment 1 rather than the product-relevant explicit ad featured in Experiment 2. We note that the major goal of the current study was to demonstrate that certain women might actually prefer a sexual appeal to a nonsexual appeal (i.e., a reversal of earlier findings). Thus, examining reactions to an ad that would be deemed gratuitous along both dimensions—irrelevance as well as explicitness – actually provided a stronger test of this thesis.

After perusing the ad booklet, participants responded to a questionnaire booklet. The key dependent variable of attitude toward the target ad was followed by questions that tapped into both affective and cognitive reactions to the target ad. For the

former, participants were asked to provide both negative and positive reactions on separate sets of scales. In particular, they were asked to indicate the extent to which they felt the following negative emotions when viewing the target ad – “upset,” “turned off,” “put me in a bad mood,” and “disgusted” – on 7-point scales ranging from 1 (*not at all*) to 7 (*very much so*). An index of negative affect was created by averaging across these items ($\alpha = .85$). Participants were also asked to indicate the extent to which they felt the following positive emotions when viewing the target ad: “happy,” “pleasant,” “turned on,” “good mood,” and “interested.” A positive affect index was created by averaging across these items ($\alpha = .87$). Factor analysis on the full set of affect items yielded two distinct factors, one comprising the positive affect items and the other consisting the negative affect items. The results section thus reports analyses based on these two separate dimensions.

Following the affect items, cognitive reactions were assessed by asking participants to indicate their level of agreement with the following statements: “I think the ad featured an inappropriate use of sex” and “I think the sexual image in the ad was irrelevant to the product advertised.” Each statement was associated with 7-point scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A cognitive index was obtained by averaging the scale items ($r = .62$). We expected that, across conditions, reactions to the target ad would be driven largely by affective rather than cognitive reactions, given the high cognitive load enforced at the time of processing the ad.

Finally, participants were asked to indicate how aroused they felt when viewing the target ad, on the following four items—“excited,” “aroused,” “nervous,” and “energetic” – on 7-point scales ranging from 1 (*not at all*) to 7 (*very much so*; $\alpha = .76$). Following a set of filler questions, participants then filled out their level of agreement (1 = *strongly disagree*; 5 = *strongly agree*) with a seven-item scale measuring attitudes toward sex (Mercer & Kohn, 1979). Example items include “I want my spouse to be a virgin,” “I approve of unmarried couples engaging in sexual intercourse,” etc. (for statements comprising the scale, please see Appendix C). After reverse-scoring appropriate items such that higher scores on each item reflected a more liberal attitude toward sex, an index of sexual attitudes was formed by averaging scores on all seven items ($\alpha = .80$). Participants were then thanked, debriefed, and dismissed.

Results

The data were analyzed in the context of a regression model using ad type (Sex vs. Nonsex) as a categorical variable and sexual attitudes as a continuous variable. Where required, for further illustration, the sexual attitude variable was subjected to a median split and analyses were carried out on a 2 (Ad type: sex vs. nonsex) \times 2 (Sexual attitudes: liberal vs. conservative) ANOVA.

The key prediction in this experiment dealt with how inherent sexual attitudes (liberal vs. conservative) influenced females’ relative liking of the sex-based ad versus the nonsex ad. For women with more conservative attitudes, we expected the sexual ad to be liked less than the nonsexual ad (replicating our earlier findings); however, we expected exactly the opposite pattern to obtain for women with relatively liberal sexual attitudes.

Analyses revealed a main effect of sexual attitudes, $F(1, 63) = 4.46, p < .05$. Consistent with our predictions, this effect was qualified by a significant interaction with ad type ($F(1, 63) = 7.91, p < .01$). The interaction was further examined by creating a categorical variable for sexual attitudes following a median split; participants with scores above (below) the median value of 3.14 were classified as being relatively liberal (conservative). Contrasts revealed that, at lower (i.e., more conservative) levels of sexual attitude, women reported a significantly better ad attitude toward the nonsexual ad than the sexual ad, $F(1, 63) = 4.56, p < .05$, thus replicating earlier findings. At higher (i.e., more liberal) levels of sexual attitude, however, the opposite pattern was obtained, with female participants (like the men in Experiment 1) now preferring the sexual ad to the nonsexual ad, $F(1, 63) = 4.67, p < .05$ (for means, see Table 3). Thus, the key hypotheses were supported. Reassuringly, analyses also revealed that sexual attitudes scores did not differ for respondents exposed to the sex-based ad versus those exposed to the nonsexual ad ($F(1, 63) = 1.02, p > .30$). Thus, our results are unlikely to be due to a reverse causation, whereby exposure to the target ad itself affected respondents’ sexual attitudes.

Next, we examined the basis for the obtained pattern of ad attitudes. Given that these results were obtained under conditions of high cognitive load, we expected ad attitudes to be based primarily on affective reactions rather than thoughtful

Table 3
Experiment 3 means

Experimental condition	Dependent variables					
	Ad attitude	Negative affect index	Positive affect index	Overall affect index	Induced arousal	Picture eroticism
Female conservatives sex ad	3.44	3.47	3.30	-0.17	2.88	7.29
Female liberals sex ad	5.15	2.21	4.55	2.35	3.49	8.47
Female conservatives nonsex ad	4.26	1.69	3.11	1.41	2.49	4.45
Female liberals nonsex ad	4.32	2.01	3.15	1.14	2.41	4.76
Male conservatives sex ad	4.23	2.95	4.11	1.16	3.52	7.98
Male liberals sex ad	5.73	1.92	4.97	3.05	3.88	8.10

cognitions. An indicator of the greater influence of affect was provided by simultaneously regressing ad attitudes on the cognitive index and the overall affective index (positive affect–negative affect), pooled across all participants. As predicted, ad attitude was significantly predicted by the affective index ($b = .35$, $t = 6.02$, $p < .0001$) but not by the cognitive index ($b = -.09$, $t = -1.24$, *ns*).

The role of affective reactions was then examined in more detail by separately looking at the positive affective index and the negative affective index. We predicted that the difference in conservative participants' reactions to the sexual ad versus the nonsexual ad should be based largely on a difference in negative affect (more negative for the sex ad) rather than a difference in positive affect. Conversely, the difference in liberal participants' reactions to the two ads should be largely driven by differences in positive affect (more positive for the sexual ad) rather than negative affect. In accordance with this perspective, contrast analyses on the negative affect index revealed that conservative women reported higher negative affect for the sexual ad versus the nonsexual ad, $F(1, 63) = 20.28$, $p < .0001$, but no difference was obtained for liberal women, $F(1, 63) < 1$. Conversely, the positive affect index showed a significant difference across ad type for liberal women, with greater positive affect being induced by the sexual ad versus the nonsexual ad, $F(1, 63) = 9.52$, $p < .01$; no difference on this index was obtained for conservative women ($F < 1$).

Lastly, using the appropriate affective index as a covariate reduced the earlier significant impact of ad type on ad attitudes to nonsignificance, both for the conservative participants and the liberal participants. For sexual conservatives, the negative affective index as covariate attained significance, $F(1, 30) = 9.54$, $p < .001$, whereas the effect of ad type on ad attitudes dropped below significance ($F < 1$). For sexual liberals, the positive affective index was a significant covariate, $F(1, 31) = 5.10$, $p < .05$, whereas the effect of ad type fell below significance ($F(1, 31) = 2.14$, $p > .15$). Thus, in each case, the appropriate affective index mediated the effect of ad type on participants' ad attitudes.

Apart from examining the role of ad-induced affect, we also examined the pattern of ad-induced arousal across conditions to check whether the obtained effects on ad attitudes might have been driven purely by arousal. However, results revealed only the expected main effect of ad type on arousal, $F(1, 63) = 6.85$, $p < .05$. Neither the main effect of sexual attitudes ($F < 1$, *ns*) nor its interaction with ad type ($F(1, 63) = 1.5$, $p > .22$) attained significance, thus mitigating the possibility that our obtained pattern of ad attitudes was driven by differences in arousal. Results on the extent to which the ad picture was perceived as being erotic were consistent with the pattern of arousal results; namely, the only significant effect on perceived erotic content was of ad type, $F(1, 63) = 43.51$, $p < .0001$.

Follow-up data

To provide convergent evidence for the influence of inherent sexual attitudes on reactions to sexually explicit

advertising, data were also collected on two men-only conditions, featuring the reactions of conservative versus liberal males to the sexual ad under high cognitive load. If our theorizing regarding the key role of sexual attitudes is correct, we would obtain a similar pattern for men as for women, with more positive ad attitudes for liberal versus conservative men. This premise was examined by investigating reactions of 28 men to the sex ad under high cognitive load. Exactly the same procedure was followed as that in the main experimental conditions. A median score of 3.29 was obtained on sexual attitudes in this male sample; participants scoring above (below) this value were classified as sexually liberal (conservative). As predicted, significantly better attitudes toward the sexual ad were obtained for liberal men than the conservative men ($F(1, 26) = 15.47$, $p < .0001$).

Discussion

Although Experiments 1 and 2 had shown that women on average react relatively poorly to an ad featuring a gratuitous sexual image, Experiment 3 provided evidence for an important moderating condition: Although women with conservative sexual attitudes replicated our earlier findings, women with liberal sexual attitudes demonstrated a preference for the sex-based ad versus the nonsexual ad. This finding provides support for a key premise underlying our theoretical conceptualization; namely, that attitudes toward sexually explicit ads are guided by attitudes toward sex per se. From a practical perspective, Experiment 3 findings can be of use in identifying segments that are likely to be more positively inclined toward sexually themed advertising.

The other major contribution of Experiment 3 lay in illuminating the process underlying participants' evaluations of sex-based ads under conditions of high cognitive load. In particular, regression analyses supported the thesis that these attitudes were driven by spontaneous affective reactions rather than considered cognitive responses. Further, our results also showed that positive and negative affect have independent roles to play in reactions toward sexual stimuli. For conservative women, a poorer attitude toward the sexual ad versus the nonsexual ad was driven by the greater negative affect induced by the sexual ad; there was no difference in positive affect across ad type for these participants. In contrast, liberal women indicated more liking for the sexual ad versus the nonsexual ad because of the more positive affect induced by the former; no differences in negative affect were obtained in this case.

General discussion

Summary and contributions

The research reported in this manuscript sought to bring a better understanding of the way in which men and women spontaneously react to the gratuitous use of sexual images in advertising. Prior advertising research has shown that both men and women evaluate such ads negatively (LaTour &

Henthorne, 2003; Peterson & Kerin, 1977; Simpson et al., 1996), possibly because the gratuitous use of sex is deemed to be unethical and creates a perception of undue manipulative intent on the marketer's part (Campbell, 1995; DeCarlo, 2005; Friestad & Wright, 1994). Although not disagreeing with this perspective, the current research suggests that a different pattern should be observed for spontaneous, gut-level reactions—such as might be obtained when an ad is processed under cognitively constrained conditions. Specifically, ad attitudes under such conditions should be primarily influenced by affective reactions rather than considered cognitions. Thus, consumers who have favorable affective reactions toward sexual stimuli—such as those who possess intrinsically positive attitudes toward sex per se—should evaluate sex-based ads positively in comparison to nonsexual ads, whereas the reverse should be observed for those with relatively unfavorable affective reactions toward sexual stimuli.

Three experiments used this conceptualization to provide some insights into how men and women react to sex-based advertising. Consistent with the prior advertising literature, control data in Experiment 1 revealed no gender difference in reactions to an explicit, product-irrelevant sexual appeal under unconstrained conditions. The primary focus of this research, however, is on the spontaneous reactions that are obtained under constrained processing—and the results obtained under these conditions told a different story. Consistent with the premise that men on average possess more positive attitudes toward sex than women, we found that, given a high cognitive load, men evaluate the use of gratuitous sexual appeals more positively than nonsexual ads, whereas the reverse pattern obtains for women. Experiment 2 then provided further evidence for a gender difference in spontaneous reactions to the gratuitous use of sex in advertising by replicating Experiment 1 findings under even more onerous processing conditions. Further, in line with our theorizing, which holds that product relevance considerations have little influence under constrained processing conditions, this study showed that women's relative dislike of an explicit sexual ad holds even when the image is relevant to the advertised product.

Experiment 3 then used our conceptualization—namely, that evaluations of sex-based ads under constrained conditions are driven by attitudes toward sex per se—to explore intra-gender differences in evaluations of sexual ads, with a particular focus on women's reactions. Drawing on research that provides evidence for systematic individual differences in women's intrinsic attitudes toward sex, this experiment predicts and shows that whereas women with conservative attitudes toward sex follow the pattern of results obtained earlier, women with liberal attitudes to sex follow the reverse pattern; namely, they exhibit more positive attitudes toward the sex-based ad than the nonsexual ad. Taken together, results from these three studies provide a theoretically derived picture of both similarities and differences between male and female reactions to the use of gratuitous sexual appeals in advertising.

This research makes several contributions, particularly with regard to the existing literature on reactions to sex in advertising. Although agreeing with earlier work that has documented uniformly negative reactions toward gratuitously sexy ads under unconstrained conditions, we extend the literature by showing that very different results (i.e., a preference for a sex-based ad vs. a nonsexual ad) can obtain under constrained capacity, for men as well as for women with liberal sexual attitudes. In addition, our research also provides insights into what drives these spontaneous evaluations of explicitly sexual advertising; specifically, our findings are consistent with the premise that attitudes toward sex per se underlie respondents' reactions to such ads. Finally, at a more detailed process level, this research identified the critical role of ad-induced affect in driving evaluations of gratuitous sexual appeals under high cognitive load. In particular, Experiment 3 findings revealed that, under such conditions, intrinsic attitudes toward sex produce corresponding affective reactions toward gratuitous sex appeals; these affective reactions (rather than considered cognitive deliberations) are primarily responsible for influencing evaluations of sexually explicit advertising. This experiment also established the independent roles of positive and negative affect in determining ad evaluations: Specifically, heightened negative affect underlies the dislike for sexual advertising among respondents with conservative attitudes to sex, whereas heightened positive affect underlies the liking for such advertising among those with liberal sexual attitudes.

Our research also contributes to the psychology literature on reactions to and evaluations of sexual stimuli. First, although this literature has provided evidence for men exhibiting more positive reactions to erotic stimuli than women (Griffit & Kaiser, 1978), our findings in Experiment 1 establish an important condition for such gender differences to be obtained; namely, at least for the case of advertising stimuli, such a difference is more likely to be observed under high cognitive load, while disappearing under unconstrained conditions. Second, the current investigation provides a perspective on the possible sources of variation in attitudes toward short-term, uncommitted sex. Although much research in this area is sympathetic of the view that gender is a primary determinant of such attitudes (e.g., Baumeister & Twenge, 2002; Clark & Hatfield, 1989; Oliver & Hyde, 1993; Symons, 1979), other views point to within-gender sources of variation as well (e.g., Bleske & Buss, 2000; Gangestad & Simpson, 2000). For instance, strategic pluralism theory (SPT; Gangestad & Simpson, 2000) suggests that mating tactics for both men and women are determined by cost–benefit considerations, which are themselves influenced by both individual and contextual differences. This theory, although acknowledging that significant differences do exist between men and women in their sexual attitudes and strategies, argues that such attitudes and strategies are also highly variable within each gender. Clearly, results from our studies, rather than supporting gender-based determinism, are more consistent with such a perspective, in that they provide evidence for both between-sex (Experiments 1 and 2)

and within-sex (Experiment 3) variation in attitudes toward sexual stimuli.

Future directions

Perhaps the most interesting avenue for further research in this area lies in exploring other factors that moderate gender differences in spontaneous reactions to sexually gratuitous advertising. Apart from trait factors, situational factors have also been shown to influence such attitudes. Some fascinating evidence exists, for instance, as to how women tend to display more positive attitudes toward short-term mating and place greater value on the potential's mate physical attractiveness during the ovulation period of their menstrual cycles. One such study found that T-shirts worn by more physically attractive men were rated by women, in the absence of any other cues, to smell better than those worn by less attractive men; further, this difference was obtained only for women who were in the fertile phase of their menstrual cycle (Gangestad & Thornhill, 1998). Such evidence has been interpreted as showing that ovulation is a situational cue that leads to more positive female attitudes toward short-term mating. Similarly, Buss (2000) lists several reasons women might develop more positive attitudes toward uncommitted sex under certain conditions: for example, to engage in mate switching, to cultivate a potential back-up mate (termed "mate insurance"), to acquire immediate economic benefits, etc.

Accordingly, although the current research has focused on how an individual difference variable can influence female attitudes to gratuitous sexual appeals, future research should examine the interaction of traits with contextual factors to obtain a more comprehensive account. For instance, building off the notion that a wish to acquire economic benefits can influence women's contextual attitudes toward sex (Buss, 2000), one might argue that if the depiction of sex in advertising portrayed the woman receiving an economic benefit, this would improve women's attitudes toward the ad. Such a hypothesis would also be consistent with recent insights on sexual economics (Baumeister & Vohs, 2004), which suggest that women view sex as an economic resource and are therefore likely to respond more favorably to sexual depictions that portray an equitable exchange of resources. Data from a parallel investigation in our laboratory provide good support for this hypothesis: Specifically, using similar stimuli to that used in the current research, we find that positioning the watch in the ad as a gift from the man to the woman significantly improves female attitudes to the sex-based ad under constrained processing conditions (whereas having little effect in the context of a nonsexual ad).

Some of the limitations present in the current research also offer opportunities for further investigation. As with some past work in the area (e.g., LaTour, 1990; LaTour, Pitts, & Snooker-Luther, 1990), the sexual and nonsexual images used in the current studies differed along other dimensions apart from sexual content (such as the mere presence of people in the former but not the latter image). It is therefore theoretically possible that the obtained differences in reactions to the sexual

versus nonsexual ad may be driven by those dimensions (although the interaction pattern obtained in Experiments 1 and 3 makes this unlikely). Future research in this area should strive to ensure greater equivalence to increase confidence in the current results.

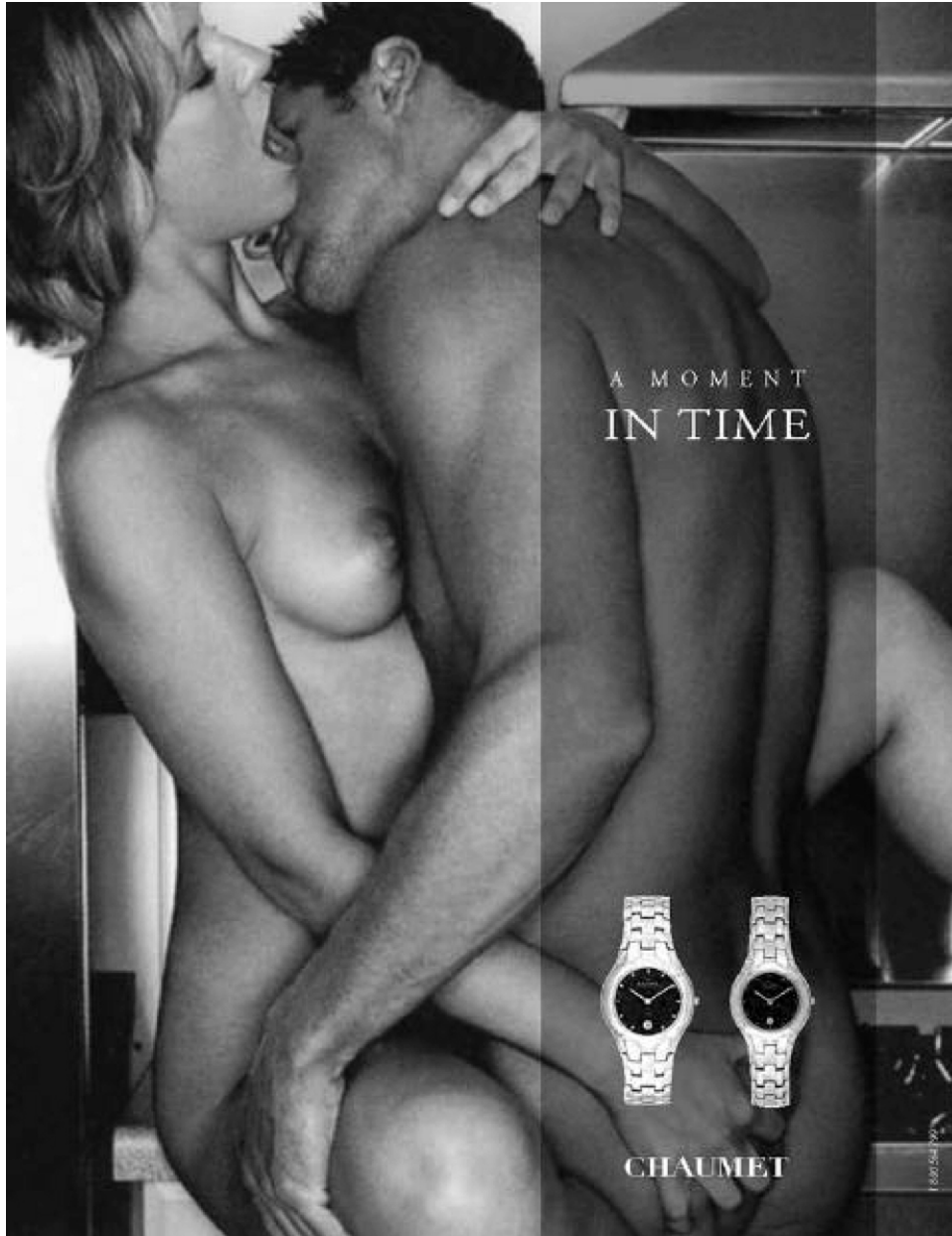
As noted earlier, the current research focused on constrained processing conditions because it is under such conditions that we can tap into spontaneous reactions that were of interest in this inquiry. However, conditions that allow more careful deliberative processing, thus resulting in the primacy of cognitions over spontaneous affect, may well reveal a different pattern of evaluations. The current investigation already highlights one such difference. Specifically, findings in the no-load control groups employed in Experiment 1 showed that, consistent with past research that has been conducted under unconstrained conditions (e.g., Mittal & Lasser, 2000; Peterson & Kerin, 1977), men as well as women responded quite negatively to the gratuitously sexual ad—contrary to the findings obtaining in the high-load cells, where men provided substantially more positive reactions than women. Future research in the area could fruitfully investigate additional differences that may be obtained between constrained and unconstrained processing of sexually themed advertising.

An additional opportunity for future research involves refining our understanding of the separate aspects of gratuitous sex appeals. As conceptualized here, gratuitousness in the context of a sexual ad has two dimensions: the relevance of the sex appeal to the product advertised and the explicitness of the sexual image utilized. To study the extreme case of gratuitousness, the current research focused primarily on a sexual ad that combined both irrelevance and explicitness; however, Experiment 2 demonstrated that, under constrained capacity, varying product relevance did not moderate the effects produced by an explicitly sexual ad. A logical next step would be to vary the explicitness of the sexual content while keeping relevance constant to provide insight into the effects of each dimension in isolation. Finally, it would be intriguing to examine the role of presentation modality. Previous research (Malamuth, 1996) suggests that, for evolutionary reasons, gender differences in reactions to sexually explicit material are particularly likely to be obtained for visual stimuli; if so, do the effects obtained currently hold for other nonvisual forms of advertising and communication? Answers to these and related questions would furnish us with increased theoretical and practical knowledge in an area of consumer research that has not received adequate attention over the years.

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Appendix A. Image used in the sex-based ad



Product Specifications provided along with the visual image:

SKU: 202LSXN Chaumet Men's/Women's watch

1. Smart and stylish wrist apparel for today's man/woman ... contemporary Chaumet men/women's watch in stainless steel.
2. Slim brushed steel case is presented on the contoured brushed and polished steel bracelet.
3. Bracelet has a push-button clasp for added security.
4. Water resistance to 90 meters (300 feet).
5. Precise Swiss quartz movement.

Appendix B. Image used in the nonsex ad

Product specifications provided along with the visual image:

SKU: 202LSXN Chaumet Men's/Women's watch

1. Smart and stylish wrist apparel for today's man/woman ... contemporary Chaumet men/women's watch in stainless steel.
2. Slim brushed steel case is presented on the contoured brushed and polished steel bracelet.
3. Bracelet has a push-button clasp for added security.
4. Water resistance to 90 meters (300 feet).
5. Precise Swiss quartz movement.

Appendix C. Attitudes toward sex (Mercer & Kohn, 1979)

1. Any sensible person would try to find out if he (she) and his (her) spouse were sexually compatible before marriage.
2. I want my spouse to be a virgin.*
3. I personally would feel guilty if I engaged in sexual relations with a person who I did not love.*
4. I personally would feel guilty if I engaged in sexual relations with a person whom I was not engaged or married.*
5. There should be no legal restrictions on sexual experimentation between consenting adults.
6. I would feel guilty about masturbating.*
7. I approve of unmarried couples engaging in sexual intercourse.

*Reverse scored.

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