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# Of Animals and Objects: Men's Implicit Dehumanization of Women and Likelihood of Sexual Aggression

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## Abstract

Although dehumanizing women and male sexual aggression are theoretically aligned, the present research provides the first direct support for this assumption, using the Implicit Association Test to assess two forms of female dehumanization: animalization and objectification. In Study 1, men who automatically associated women more than men with primitive constructs (e.g., animals, instinct, nature) were more willing to rape and sexually harass women, and to report negative attitudes toward female rape victims. In Study 2, men who automatically associated women with animals (e.g., animals, paw, snout) more than with humans scored higher on a rape-behavioral analogue, as well as rape proclivity. Automatically objectifying women by associating them with objects, tools, and things was also positively correlated with men's rape proclivity. In concert, the research demonstrates that men who implicitly dehumanize women (as either animals or objects) are also likely to sexually victimize them.

## Keywords

dehumanization, sexual aggression, sex discrimination, Implicit Association Test

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Despite the Women's Movement, sexual victimization continues at an alarming rate in the United States. Longitudinal evidence suggests that one in eight adult women are victimized by rape (D'Amora & Burns-Smith, 1999), and national surveys reveal that approximately 18% of women in the United States have experienced rape or attempted rape (Tiaden & Thoennes, 1998). It has been estimated that one in four women have experienced rape or attempted rape while in college (Fischer, Cullen, & Turner, 2000) and that 20% of adolescent women have been sexually abused by a date (Silverman, Mucci, & Hatha, 2001). Additional research suggests that between 50% and 85% of women are likely to be maltreated by men (e.g., sexually harassed, the victim of obscene phone calls, or stalked; Gelfand, Fitzgerald, & Drasgow, 1995; MacMillan, Nierobisz, & Welsh, 2000; see Fairchild & Rudman, 2008, for a review). The psychological and physical consequences of sexual victimization for women are severe, even when perpetrators are known (for a review, see Campbell, 2002). Moreover, the specter of sexual assault negatively impacts many women's lives, causing them to be more fearful of crime in general than men (Ferraro, 1996; Fisher & Sloan, 2003; Harris & Miller, 2000), and restricting their freedom of movement and use of public spaces (Hickman & Muehlenhard, 1997; Stanko, 1995). It is,

therefore, critical to understand the factors associated with male sexual aggression. The present research focused on dehumanizing women, encompassing animalization and objectification (Haslam, 2006). In two studies, we assessed the relationship between female dehumanization (using implicit measures) and men's willingness to sexually victimize women (including sexual harassment, rape proclivity, and a rape-behavioral analogue [RBA]; Widman & Olson, 2011).

## Infrahumanization Processes

Prior research has established that people tend to infrahumanize outgroup members by denying them unique human secondary emotions, whether positive or negative (e.g., compassion, hopefulness, melancholy, and guilt; Paladino et al., 2002). The present research did not employ infrahumanization

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because Leyens et al. (2000) argued that it was not likely to be applicable to women. When discussing the limitations of their approach, they wrote, “For instance, it may be difficult to deny secondary emotions to certain groups (e.g., women); if these groups are disliked, there are other means to devalue them (e.g., by denying them intelligence)” (p. 194). Indeed, women are stereotyped as being more emotional than men (e.g., Plant, Hyde, Keltner, & Devine, 2000) and both genders tend to endorse subjectively profemale beliefs that would make them unlikely to deny women secondary emotions (Glick & Fiske, 1996). Perhaps for these reasons, research investigating whether women are infrahumanized found no evidence of intergroup biases; instead, both male and female participants who were high on benevolent sexism (BS) also tended to attribute positive secondary emotions (compassionate, hopeful, and nostalgic) to women, whereas those high on hostile sexism (HS) tended to deny these emotions to women (Viki & Abrams, 2003). The present research will investigate whether HS moderates implicit dehumanization of women either as animals or objects.

### Dehumanization as Animalization

People can be perceived as “subhuman” either because they have not fully evolved (i.e., they are animals), or because they have the properties of an object or a machine (e.g., they are likely to be impervious to pain), and women are likely to be at risk for both types of dehumanization (Haslam, 2006). As a group, women may be more animalized than men because women’s physiology and “maternal instincts” place them closer to animals, bodies, and nature, whereas men are more likely to be associated with culture, intellect, and symbolic achievements (Ortner, 1974; see also Citrin, Roberts, & Fredrickson, 2004; Goldenberg, Heflick, Vaes, Motyl, & Greenberg, 2009). Compared with men, women devote more of their resources (e.g., time, health, and energy) to natural processes of reproduction, whereas men “transcend” nature through goal-oriented action, much of it designed to control nature (Ortner, 1974). Perhaps for this reason, both genders tend to associate women with nature more so than men (Reynolds & Haslam, 2011). Because traditional religious and philosophical ideologies often associate the physical body with sin, weakness, disgust, and decay, and because women may be more “embodied” than men (Goldenberg & Roberts, 2004; Ortner, 1974), implicitly associating women with nature and animals is likely to have derogatory implications. Indeed, Judeo-Christian beliefs dictate that man is to have dominion over nature, which in this analysis leads, by extension, to dominion over women.

In an investigation using the single category Implicit Association Test (IAT), the authors found that sexualized women were animalized more so than personalized women, and more so than sexualized men (Vaes, Paladino, & Puvia, 2011, Study 1). Although no gender differences emerged, women’s motives for animalization centered on the desire to

distance themselves, whereas men’s motives centered on sexual attraction (Vaes et al., 2011, Study 2). In a third study, men primed with sex were more likely to animalize *personalized* women, compared with unprimed men (Vaes et al., 2011, Study 3). Because this research was focused on motives for animalization, it did not address potential outcomes. Therefore, whether animalizing women informs men’s sexual aggression is an empirical question addressed in the present research.

Although researchers have found that Whites tend to animalize Blacks (by associating Black men with apes; Goff, Eberhardt, Williams, & Jackson, 2008), we know of no prior research directly testing whether men animalize women in general (i.e., at the group level). Furthermore, although animalizing others has been linked to their victimization—for example, Germans blatantly animalized Jews as a precursor to the Holocaust (Gilbert, 1985) and Whites who implicitly animalized Blacks also supported police brutality directed at Blacks (Goff et al., 2008)—we know of no comparable research investigating a link between animalizing women and male sexual aggression. However, the idea that dehumanizing others is a precursor to aggressing against them has a venerable tradition within social psychology (e.g., Bandura, Underwood, & Fromson, 1975; Greitemeyer & McLatchie, 2011; Kelman, 1973; for a review, see Haslam, 2006).

### Dehumanization as Objectification

A fact of life is that men often objectify women, attending more to their bodies than their intellect or personality, usually for sexual purposes (Fredrickson & Roberts, 1997; Rudman & Borgida, 1995). Theorists have long argued that objectification is a form of dehumanizing women, but whether objectifying women informs male sexual aggression has been generally assumed rather than investigated. According to Nussbaum (1999), objectification is present whenever a person is treated (a) as a tool for one’s own purposes (instrumentality and ownership), (b) as lacking agency and self-determination (inertness and denial of autonomy), (c) as if permissible to damage or destroy (violability), (d) as if there is no need to show concern for the “object’s” feelings and experiences (denial of subjectivity), or (e) as interchangeable with similar others (fungibility). If men’s objectification of women reflects any or all of these factors, it would seem plausible to expect a link between men’s tendency to objectify women and sexual aggression.

To what extent does objectifying women play a role in men’s maltreatment of women? The media have rightly been blamed for chronically exploiting women’s bodies (e.g., in advertising). Indeed, men exposed to sexist television ads subsequently thought about women in general, and behaved toward specific female job candidates, as if they were sexual objects more so than men who were exposed to ads that did not use women as scantily clad, decorative objects (Rudman & Borgida, 1995). Moreover, men exposed to films that

objectified women subsequently showed less empathy for rape victims, suggesting desensitization effects (Linz, Donnerstein, & Penrod, 1988; Millburn, Mather, & Conrad, 2000). Furthermore, sexualized women are denied personhood (e.g., they are viewed as less competent and less worthy of moral treatment, compared with nonobjectified women; Loughnan et al., 2010). Additional research suggests that objectifying women merely by focusing attention on their appearance results in lowering their perceived competence and humanity (Heflick & Goldenberg, 2009; Heflick, Goldenberg, Cooper, & Puvia, 2010). However, to date, researchers have not investigated whether men tend to objectify women as a group, and whether those who do so are also more likely to sexually aggress against them. On one hand, the literature just described suggests that men who objectify women ought to be more willing to sexually victimize them. On the other hand, objectification is not always negative (Gruenfeld, Inesi, Magee, & Galinsky, 2008; see also Goldenberg, Cooper, Heflick, Routledge, & Arndt, 2011), and objectifying women may even offset the negative effects of animalizing them (e.g., by sanitizing and idealizing their bodies; Goldenberg & Roberts, 2004).

By contrast, a large literature inspired by self-objectification theory (Fredrickson & Roberts, 1997) has documented the negative consequences, for women, of internalizing men's proclivity to objectify them (for a review, see Moradi & Huang, 2008). For example, self-objectification is positively correlated with depression and disordered eating in women (e.g., Calogero, Davis, & Thompson, 2005; Szymanski & Henning, 2007; Tiggemann & Kuring, 2004). Furthermore, it can depress women's sexual functioning (Sanchez & Kiefer, 2007) and their ability to concentrate on intellectual pursuits (e.g., math performance; Hebl, King, & Lin, 2004). Thus, there are harmful consequences for women of internalizing the belief that their value to society resides mainly in their attractiveness to men.

More recently, researchers have begun to assess individual differences in men's tendency to objectify sexualized women, using indirect measures. For example, men's HS scores correlated with less activity in brain regions associated with mental state attribution (medial prefrontal cortex, posterior cingulate cortex, and anterior temporal poles) when viewing sexualized female targets (Cikara, Eberhardt, & Fiske, 2011). As a measure of implicit objectification, Cikara et al. (2011) used an IAT that obliged male participants to associate scantily clad or fully clothed women with first-person action verbs (e.g., use, push, handle) and third-person action verbs (e.g., uses, pushes, handles). They predicted, and found, that men with higher HS scores would associate sexualized women with first-person more than third-person verbs, suggesting, they propose, that sexualized women have less agency (and are "used" by others). However, an important limitation of this research is that it did not directly assess whether men spontaneously associate women as a group with objects more than humans, or whether objectifying women plays a role in male sexual aggression.

## Overview of Research and Hypotheses

Because people are likely to resist admitting they dehumanize women as either animals or objects, we used the IAT (Greenwald, McGhee, & Schwartz, 1998), a response latency task that is resistant to faking (e.g., Banse, Seise, & Zerbes, 2001; Kim, 2003), and whose psychometric properties (e.g., Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005; Nosek, Greenwald, & Banaji, 2007) and predictive utility (Greenwald, Poehlman, Uhlmann, & Banaji, 2009; Jost et al., 2009; Rudman, 2011) are well established. Past research has effectively used the IAT to assess men's objectification of sexualized women (Cikara et al., 2011) and Whites' animalization of Black men (Goff et al., 2008). It was therefore an appropriate tool to use.

In Study 1, we predicted that men (but not women) who automatically associated women more than men with animals would be more willing to sexually harass and rape women, and to report negative attitudes toward female rape victims. To measure rape proclivity, we used an index that has been shown to correlate with men's sexual arousal when viewing depictions of rape (Malamuth, Haber, & Feshbach, 1980; Malamuth, Heim, & Feshbach, 1980). In Study 2, we added a RBA task (Widman & Olson, 2011) and we measured both implicit animalization and objectification using nonrelative Brief IATs (B-IATs; Sriram & Greenwald, 2009) to disentangle dehumanizing women from humanizing men.<sup>1</sup> We expected men who automatically associated women with either animals or objects more so than with humans to be more likely to sexually victimize them. Because men's HS scores were associated with objectifying sexualized women (Cikara et al., 2011) and inhumanizing women (Viki & Abrams, 2003), we assessed hostile and BS in each study (Glick & Fiske, 1996, 2001).

## Study 1

The animal IAT obliged people to associate women and men with constructs related to animals versus humans. According to Ortnor (1974), women's reproductive systems cause them to be associated with primitive constructs (e.g., animals and nature) more so than men, whereas men should be associated with culture (e.g., society and culture) because they are freer to engage in activities that transcend nature. Therefore, we expected a significant IAT effect. We did not predict participant gender differences on this measure, given past research (Reynolds & Haslam, 2011; Vaes et al., 2011; Viki & Abrams, 2003). Of more importance, we expected that, for men only, IAT scores would be positively associated with their likelihood to rape and sexually harass women, and negative attitudes toward female rape victims (e.g., that sexually active women should not complain about being raped). We also examined whether the IAT would show incremental validity after accounting for explicit sexism. Finally, we measured interest in consensual sex to provide

discriminant validity. That is, we did not expect the animal IAT to correlate with this index for either gender.

## Method

**Participants.** Volunteers ( $N = 210$ , 111 men) participated in exchange for partial fulfillment of an Introductory Psychology course requirement. Of these, 89 (42%) were White, 48 (23%) were Asian, 30 (14%) were Hispanic, 23 (11%) were Black, and 20 (10%) identified with another ethnicity. Their mean age was 19 (range = 18-23).

## Stimulus Materials

**Animal IAT.** Participants categorized six words representing "Women" or "Men" (*women, woman, female, she, her, girl* and *men, man, male, him, he, boy*) with five words characteristic of either animals (*animals, nature, instinct, physical, bodies*) or humans (*culture, society, mind, symbols, monuments*). Drawing on Ortner (1974), we used "Nature" and "Culture" as the attribute labels. Implicit associations were assessed by asking people to press the same response key for either women or animal stimuli, and to press the opposite response key for either men or human stimuli. These associations were then reversed. The order in which participants performed these two tasks was counterbalanced, a procedural variable that did not influence results. The IAT effect is the difference in response latency when performing tasks that oblige associating women + animals, compared with men + animals, such that high scores indicate animalizing women more so than men.<sup>2</sup> In each study, we followed recommended use of the  $D$  statistic (which standardizes the IAT effect separately for each individual; Greenwald, Nosek, & Banaji, 2003).

A separate sample ( $n = 120$ , 75 men) rated the stimulus words used in the IAT on scales ranging from 1 (*extremely human*) to 10 (*extremely animalistic*) in response to the prompt "How much do you associate this word with animals versus humans?" We averaged responses to the human words ( $\alpha = .71$ ) and the animal words ( $\alpha = .67$ ). A paired-sample  $t$  test showed a robust difference,  $t(119) = 28.73$ ,  $p < .001$  ( $d = 2.64$ ). For both animal ( $M = 6.27$ ,  $SD = 1.09$ ) and human words ( $M = 2.33$ ,  $SD = 1.13$ ), scores reliably differed from the neutral point,  $t(119) = 13.68$  and  $t(119) = -25.69$ , respectively,  $ps < .001$ . These results support interpreting Study 1's IAT effects as animalizing women more than men (or humanizing men more than women).

**Ambivalent Sexism Inventory (ASI).** The ASI (Glick & Fiske, 1996) consists of two 11-item subscales that assess HS (e.g., "Women seek to gain power by getting control over men") and BS (e.g., "Women, compared with men, tend to have a superior moral sensibility"). Participants rated ASI items on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. High scores reflect more HS ( $\alpha = .81$ ) or BS ( $\alpha = .71$ ).

**Sexual harassment.** We used Pryor's (1987, 1998) Likelihood to Sexually Harass (LSH) Scale, which consists of

10 vignettes describing a situation in which the participant has power over another and can use it to coerce her or him into having sex. Participants indicated on a 5-point scale anchored at 1 (*not at all likely*) and 5 (*very likely*) whether they would take advantage of the situation and harass the target described in each vignette. The vignettes described a female target for male participants and a male target for female participants. Responses showed internal consistency ( $\alpha = .94$ ) and were averaged to form the LSH index.

**Sexual measures.** We used a subset of items from the Attraction to Sexual Aggression Inventory (Malamuth, 1989) to measure rape proclivity and interest in consensual sex. Each item used scales ranging from 1 (*very unlikely*) to 5 (*very likely*) and the prompt "If you could be assured that no one would know and that you could in no way be punished for engaging in the following act, how likely, if at all, would you be to commit such act?" To measure rape proclivity, the items were "rape" and "forcing a sex partner to do something sexual that she or he did not want to do." These items were combined to form the rape proclivity index,  $r(208) = .56$ ,  $p < .001$ . Three additional items, "kissing," "oral sex," and "heterosexual intercourse," formed the consensual sex index ( $\alpha = .75$ ). Filler items included likelihood of engaging in group sex and bondage.

**Attitudes toward rape victims.** The Attitudes Toward Rape Victims Scale (ARVS; Ward, 1988) consists of 25 items that assess negative attitudes, including victim blame, deservingness, and trivialization ( $\alpha = .85$ ). Sample items include "In most cases when a woman was raped she deserved it" and "Sexually experienced women are not really damaged by rape." Participants responded using scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

## Procedure

Participants, recruited for a "Social Perception" project, were escorted to a private cubicle by an experimenter who started a computer program that administered the measures in the following order: A flowers-insect IAT (Greenwald et al., 1998) familiarized participants with the task, followed by the ASI, ARVS, LSH, consensual sex index, rape proclivity, and the animal IAT. The decision to administer the animal IAT last was based on our desire to avoid creating suspicion, and the fact that people are less able to control their responses to the IAT. The program randomly presented items within each measure. Participants then indicated their age, race, and gender. Subsequently, they were debriefed and compensated.

## Results and Discussion

Table 1 presents tests of gender differences with effect sizes (Cohen's  $d$ ). Not surprisingly, men scored higher than women on rape proclivity, the LSH, ARVS, and HS. However, men did not outscore women on the animal IAT, and effect sizes were near zero for both genders (see also Vaes et al., 2011). Nonetheless, scores were normally

**Table 1.** Descriptive Statistics by Participant Gender (Study 1;  $N = 111$  men and 99 women)

	Men		Women		Gender differences	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	Cohen's <i>d</i>
Animal IAT	0.01	.36	0.01	.29	0.13	0.00
Rape proclivity	1.51	.83	1.30	.64	2.08*	0.28
LSH	2.07	.98	1.30	.50	7.20***	0.89
ARVS	2.14	.45	1.90	.40	3.92***	0.28
Hostile sexism	3.13	.55	2.75	.62	4.67***	0.62
Benevolent sexism	3.15	.53	3.13	.56	0.23	0.04
Consensual sex	4.50	.84	4.32	.87	1.59	0.21

Note: IAT = Implicit Association Test; LSH = likelihood to sexually harass; ARVS = Attitudes Toward Rape Victims Scale.

\* $p < .05$ . \*\*\* $p < .001$ .

**Table 2.** Correlations as a Function of Participant Gender (Study 1;  $N = 111$  men and 99 women)

	IAT	HS	BS	LSH	Rape	ARVS	Consensual sex
Animal IAT	—	-.01	.04	.20**	.20**	.24***	.03
HS	-.07	—	.06	.23**	.07	.38***	.02
BS	-.19	.36***	—	.23**	-.19**	.06	.39***
LSH	.09	.17	.04	—	.11	.54***	.23**
Rape proclivity	-.02	.01	.03	.21**	—	.21**	-.16
ARVS	-.09	.49***	.18	.30***	.13	—	-.03
Consensual sex	-.15	-.05	.19	.06	.06	-.14	—

Note: IAT = Implicit Association Test; HS = hostile sexism; BS = benevolent sexism; LSH = likelihood to sexually harass; ARVS = Attitudes Toward Rape Victims Scale. Correlations for men are above the diagonal. Correlations for women are below the diagonal.

\*\* $p < .05$ . \*\*\* $p < .01$ . \*\*\*\* $p < .001$ .

distributed, Shapiro–Wilks statistic = .99,  $p = .15$  (range =  $-1.27$ – $0.98$ ,  $M = 0.01$ ,  $SD = 0.33$ ). There were also no gender differences on measures of BS or interest in consensual sex.

Table 2 shows the correlations among measures separately by gender, with men shown above the diagonal and women below. As expected, men who scored high on the animal IAT were also more willing to engage in sexual harassment and rape, and to report negative attitudes toward female rape victims. Women did not show these correlations but neither did their correlations differ from men's, except in the case of the relationship between the animal IAT and the ARVS,  $z = 2.35$ ,  $p < .01$ . Furthermore, IAT effects were not significantly correlated with men's (or women's) interest in consensual sex. These results support our hypotheses, and the animal IAT's validity.

For men, HS and BS scores were unrelated to the animal IAT, suggesting that men need not be sexist to automatically dehumanize women. Furthermore, HS scores were negligibly correlated with rape proclivity. However, they were linked to LSH and the ARVS. That is, men who scored relatively high on HS were more willing to sexually harass women and expressed more negative attitudes toward female rape victims. The correlation between LSH and rape

proclivity was weakly positive, whereas both were positively correlated with negative attitudes toward rape victims. For women, the only correlate of the animal IAT was BS, which showed a marginally negative link,  $p = .06$ . That is, women who endorsed beliefs that women are morally superior to men were somewhat more likely to associate men more than women with animals.

To test the incremental validity of the animal IAT, we standardized all variables and then regressed men's rape proclivity scores on HS and BS (in Step 1), and the IAT (in Step 2). We repeated this analysis for men's LSH scores, and their ARVS scores. Table 3 shows the results, which reveals that even after controlling for explicit sexism, the animal IAT contributed significant variance to each criterion.

In summary, Study 1's findings uniquely demonstrate that automatically dehumanizing women is associated with male sexual aggression. For men only, the animal IAT reliably and positively correlated with rape proclivity, LSH, and negative attitudes toward rape victims. This was true even after accounting for men's hostile and BS. Furthermore, animalizing women was not reliably correlated with men's general interest in sex, providing discriminant validity for the animal IAT. In Study 2, we added measures of female and male

**Table 3.** Regression Analyses for Men (Study 1)

	Step	$\beta$	$t$	$R^2 \Delta$	$p$
Model 1 (rape proclivity)					
Hostile sexism	1	.08	0.87		
Benevolent sexism	1	-.19	1.98*	.04	.112
Hostile sexism	2	.09	0.92		
Benevolent sexism	2	-.20	2.10***		
Animal IAT	2	.21	2.26***	.05	.026
Model 2 (LSH)					
Hostile sexism	1	.22	2.40***		
Benevolent sexism	1	.22	2.05***	.10	.003
Hostile sexism	2	.22	2.48***		
Benevolent sexism	2	.21	2.42***		
Animal IAT	2	.20	2.24***	.04	.028
Model 3 (ARVS)					
Hostile sexism	1	.37	4.19***		
Benevolent sexism	1	.04	0.45	.14	.000
Hostile sexism	2	.38	4.37***		
Benevolent sexism	2	.03	0.36		
Animal IAT	2	.24	2.82***	.06	.006

Note: IAT = Implicit Association Test; LSH = likelihood to sexually harass; ARVS = Attitudes Toward Rape Victims Scale. The criterion for each model is in parentheses. Standardized regression coefficients are shown.

\* $p < .06$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

objectification. We concentrated on male participants given our aim of investigating the association between dehumanizing women and men's sexual aggression.

## Study 2

Although supportive of our hypotheses, Study 1 is limited by the relative nature of the IAT, which prevents knowing whether animalizing women or humanizing men (or some combination of both) informs men's sexual aggression. In Study 2, we measured nonrelative associations with B-IATs (Sriram & Greenwald, 2009), which allowed us to pinpoint female dehumanization effects. Moreover, although the primitive words used in Study 1's IAT were pretested to be more representative of animals than humans, Study 2 more directly assessed implicit animalization (by using the label *Animal* and words like *animal*, *paw*, and *snout*; Vaes et al., 2011). We also measured implicit objectification of women and men to compare it to animalization. Although past research has focused on objectifying sexualized women (Cikara et al., 2011; Loughnan et al., 2010; Strelan & Hargreaves, 2005), it is important to measure whether men automatically objectify women in general, and whether doing so plays a role in male sexual aggression.

Finally, we used a RBA as a more direct measure of male sexual aggression (Widman & Olson, 2011). In this task, men are obliged to choose between violent and sexually violent images to present to women, ostensibly for an upcoming project. Supporting its validity, men were likely to expose

women to sexually violent images to the extent they possessed implicit prorape attitudes (Widman & Olson, 2011). Similarly, men with a history of sexual assault were more likely to expose women to sexually violent film clips than a control group of men (Hall & Hirschman, 1994; Mitchell, Angelone, Hirschman, Lilly, & Hall, 2002). Because measuring sexual assault in the laboratory is prevented by ethical and practical limitations, behavioral analogues of sexual imposition may be the best option for researchers. To assess the convergent validity of the RBA, and the predictive utility of the B-IATs, we also included Study 1's measures of sexual aggression (rape proclivity and the LSH).

We expected men who scored high on the female animal B-IAT and the female object B-IAT to be more willing to sexually victimize women. Animalizing or objectifying men was not expected to reveal the same pattern, nor did we expect men's interest in consensual sex to covary with their B-IAT scores.

## Method

**Participants and Design.** Volunteers ( $N = 58$  men) participated in exchange for partial fulfillment of their Introductory Psychology research requirement. Of these, 30 (52%) were White, 16 (28%) were Asian, 6 (10%) were Black, 5 (9%) were Hispanic, and 1 reported another ethnic identity. The experimental factors concerned the B-IATs. The design was a 2 (target group: women, men)  $\times$  3 (B-IAT: animal, object, human)  $\times$  2 (target group order: women first, men first)  $\times$  3

(B-IAT order: animal first, object first, human first) mixed factorial with repeated measures on the first two factors. Preliminary analyses showed that counterbalancing produced no discernable effects. We therefore collapsed across these factors.

## Measures

Following Study 1, we used the same rape proclivity index,  $r(56) = .58, p < .001$ , and consensual sex index ( $\alpha = .95$ ). We also used the LSH ( $\alpha = .93$ ) and the ASI to measure HS ( $\alpha = .81$ ) and BS ( $\alpha = .72$ ). Because BS was correlated only with HS,  $r(56) = .29, p < .05$ , it is not further discussed.

**B-IATs.** Each B-IAT consisted of four blocks of 60 trials each. Counterbalancing resulted in six different conditions.<sup>3</sup> When the target group was women, Block 1 was a practice block in which “Women” was featured prominently as the category to be responded to using the right key “P” and participants responded to all other words (i.e., background stimuli) using the left key “Q”. We used female words (*women, woman, female, she, her*) to represent “Women,” and we used neutral words unrelated to animals, objects, or humans as background stimuli (*sunset, dust, green, yellow, blue, orange*). Because there were six different orders, we describe events for Orders 1 and 2 (see Note 3). In the next two blocks, either “Women and Animal” or “Women and Human” were featured as the two categories to be responded to using the right key, with “Animal” represented by *animal, instinct, paw, and snout* and “Human” represented by *human, culture, logic, and rational* (Vaes et al., 2011). Background stimuli consisted of the same neutral words and either human words (for “Women and Animal”) or animal words (for “Women and Human”), which were responded to using the left key. Response latency differences between these two counterbalanced blocks were translated into *D* scores such that a high score reflects animalizing women more than humanizing them. We refer to this measure as the female animal B-IAT.

In the fourth block, “Women and Object” were featured as the two categories to be responded to using the right key, with “Object” represented by *object, tool, device, and thing*. The same neutral words and human words were used as background stimuli. Response latency differences between this block and the block categorizing “Women and Human” together were translated into *D* scores such that a high score reflects objectifying women more than humanizing them. We refer to this measure as the female object B-IAT.

The same procedure was followed when the target group was men. The only difference was that “Men” were represented using *men, man, male, he, and his*. The male animal B-IAT and the male object B-IAT were scored in the same direction as their female counterparts (i.e., reflecting dehumanization of men independent of associations with women).

**RBA.** The RBA was modeled on a task used by Widman and Olson (2011), who found that men’s implicit attitudes toward rape (using evaluative priming) correlated with the RBA. The cover story was as follows:

For this last part of the study we need you to help us select pictures for an upcoming study with women. In this future study we will show women some of the pictures you will see today, but they will see the pictures many times to test their perceptions. On the next few screens, we will show you two pictures and we would like you to pick the one picture we should use in the women’s study. Pick the one you think should be shown to women many times.

Over 17 trials, participants were obliged to choose between two images that were either sexually violent or otherwise offensive to women (e.g., depicting rape or sexual harassment) or aggressive without women involved (e.g., male-on-male aggression). Stimuli were downloaded from the Internet and included classical paintings (e.g., “The Rape of Lucretia”) as well as contemporary images (e.g., video game posters and magazine ads).<sup>4</sup> Pairs of pictures were selected on the basis of the authors’ judgment that each pair contained a picture that was obviously more offensive to women. Responses were scored so that 0 = *violent*, 1 = *sexually violent*, and summed to form the RBA ( $\alpha = .83$ ).

An independent sample of undergraduates ( $n = 23$ ; 19 women) rated the 34 pictures on how sexual, how aggressive, and how offensive to women each was on scales ranging from 1 (*not at all*) to 10 (*extremely*). The reliabilities for each rating were adequate for both sexually violent and violent pictures ( $\alpha$ s ranged from .83 to .95). Planned comparisons revealed that sexually violent pictures were rated as more sexual than violent pictures,  $t(22) = 10.81, p < .001, d = 2.12$  ( $M_s = 5.98$  vs. 2.18). They were also judged to be more offensive to women than violent pictures,  $t(22) = 8.59, p < .001, d = 1.79$  ( $M_s = 5.65$  vs. 2.15). Finally, violent pictures were judged to be more aggressive than sexually violent pictures,  $t(22) = 3.46, p < .01, d = .71$  ( $M_s = 6.30$  vs. 5.69). Therefore, men who imposed sexually violent pictures on women would be doing so specifically because they were sexually offensive to women, rather than merely aggressive.

## Procedure

Participants, recruited for a “Social Perception” project, were escorted to individual booths. After indicating consent, the experimenter started a program that administered the counterbalanced B-IATs, followed by the ASI, the LSH, the rape proclivity index, and the RBA. We administered the B-IATs first in Study 2 because the IAT was administered last in Study 1. The RBA was presented last to bolster the cover story that it involved piloting images for an upcoming project. Items within each measure were presented randomly. After indicating their gender, age, and race, participants were fully debriefed and compensated.

## Results and Discussion

Table 4 shows the means, standard deviations, and ranges of all measures. Conceptually replicating Study 1, the female and male animal B-IATs resulted in small *D* scores that did

**Table 4.** Descriptive Statistics for Men (Study 2;  $N = 58$  men)

	<i>M</i>	<i>SD</i>	Range	
Animal B-IAT (women)	0.02	0.23	-0.55	0.40
Animal B-IAT (men)	0.01	0.25	-0.69	0.56
Object B-IAT (women)	0.13	0.27	-0.46	1.16
Object B-IAT (men)	0.08	0.21	-0.38	0.73
Rape-behavioral analogue	11.67	3.98	4.00	17.00
Rape proclivity	1.50	0.78	1.00	4.00
LSH	2.17	0.94	1.00	4.00
Hostile sexism	3.25	0.48	1.51	4.27
Consensual sex	4.67	0.74	1.67	5.00

Note: B-IAT = Brief Implicit Association Test; LSH = likelihood to sexually harass.

not significantly differ from zero, or differ from each other, all  $t(57) < 1.00$ ,  $ns$  (see also Vaes et al., 2011). Nonetheless, scores were normally distributed for the female animal B-IAT: Shapiro–Wilks statistic = .97,  $p = .18$  (range = 0.55-0.44,  $M = 0.02$ ,  $SD = 0.23$ ). They were also normally distributed for the male animal B-IAT: Shapiro–Wilks statistic = .98,  $p = .39$  (range = 0.69-0.56,  $M = 0.01$ ,  $SD = 0.25$ ).

New to Study 2, we measured implicit objectification of women and men. As with the animal B-IATs, objectification  $D$  scores for male and female targets did not reliably differ,  $t(57) = 1.09$ ,  $p = .23$ . Scores for the female object B-IAT were normally distributed: Shapiro–Wilks statistic = .98,  $p = .58$  (range = -1.46-1.16,  $M = 0.13$ ,  $SD = 0.27$ ). They were not normally distributed for the male object B-IAT: Shapiro–Wilks statistic = .88,  $p < .001$  (range = -0.38-0.74,  $M = 0.08$ ,  $SD = 0.21$ ). Finally, the correlation between the female animal and object B-IATs was weakly positive,  $r(56) = .20$ ,  $p = .13$ . The same relationship was reliably positive when men were the target group,  $r(56) = .44$ ,  $p = .001$ .

### Implicit Dehumanization and Male Sexual Aggression

The focal aim of Study 2 was to examine whether dehumanizing women as either animals or objects would be associated with male sexual aggression. Table 5 shows the correlations among Study 2's measures. As can be seen, the female animal B-IAT was positively correlated with the RBA and the rape proclivity index but not with the LSH (as it was in Study 1, using the IAT). New to Study 2, the female object B-IAT was reliably correlated with rape proclivity but not with the RBA or the LSH. Providing discriminant validity, sexual aggression measures were unreliably related to (a) the male animal and male object B-IATs and (b) willingness to engage in consensual sex, which was also dissociated from the B-IATs.

HS was significantly related to the LSH, marginally correlated with rape proclivity,  $r(56) = .23$ ,  $p = .09$ , and weakly but positively linked to the RBA,  $r(56) = .20$ ,  $p = .13$ .

The last row in Table 5 reveals that HS was dissociated from the female animal B-IAT, as it was in Study 1 as well as the female object B-IAT. Thus, HS corresponds with objectifying sexualized more than personalized women (Cikara et al., 2011) but not with objectifying women in general. In other words, it appears that men do not have to score high on HS to automatically dehumanize women as a group, as either animals or objects.

Table 5 also shows that the RBA and rape proclivity were marginally, positively correlated,  $r(56) = .21$ ,  $p = .10$ , whereas both measures significantly correlated with the LSH, both  $r(56) > .31$ ,  $ps < .05$ , providing convergent validity for the RBA. These relationships suggested it would be prudent to use the LSH in tandem with HS to investigate the incremental validity of the female animal and object B-IATs when predicting the RBA and rape proclivity.

To test the incremental validity of the female animal B-IAT, we standardized all variables and then separately regressed RBA and rape proclivity scores on HS and LSH (in Step 1), and the female animal B-IAT (in Step 2). We repeated this analysis using rape proclivity as the dependent variable. Results are shown in Table 6. Models 1 and 2 reveal that even after controlling for explicit measures, the female animal B-IAT contributed significant variance to each criterion. Model 3 tests the incremental validity of the female object B-IAT using rape proclivity as the dependent variable. Again, even after controlling for explicit measures, the female object B-IAT contributed significant variance to men's rape proclivity. In each analysis, only LSH (not HS) was also a significant predictor. In other words, likelihood to sexual harass was a better predictor of rape-related measures than HS, but implicit dehumanization provided unique predictive utility.

In summary, Study 2 found that the female animal B-IAT women was associated with an analogue of sexual assault, suggesting that men who automatically dehumanize women as animals are also likely to impose graphic portrayals of sexual violence on women. Animalizing women was also associated with men's rape proclivity, as it was in Study 1. Because the B-IAT is nonrelative, and because male animal

**Table 5.** Correlations Among Men's Variables (Study 2; *N* = 58 men)

	Target group: Women		Target group: Men		LSH	Consensual sex	Hostile sexism
	Animal B-IAT	Object B-IAT	Animal B-IAT	Object B-IAT			
Rape-behavioral analogue	.31**	.01	.09	-.03	.31**	.04	.20
Rape proclivity	.28**	.29**	-.02	.08	.46****	-.01	.23†
LSH	.04	.02	.20	.22	—	.19	.29**
Consensual sex	.01	-.11	-.06	-.17	.19	—	.01
Hostile sexism	.13	.09	.04	-.01	.29**	.01	—

Note: B-IAT = Brief Implicit Association Test; LSH = likelihood to sexually harass.

†*p* < .10. \*\**p* < .05. \*\*\**p* < .01. \*\*\*\**p* < .001.

**Table 6.** Regression Analyses for Men (Study 2)

	Step	$\beta$	<i>t</i>	<i>R</i> <sup>2</sup> $\Delta$	<i>p</i>
<b>Model 1 (RBA)</b>					
Hostile sexism	1	.13	0.95		
LSH	1	.27	2.36**	.10	.041
Hostile sexism	2	.09	0.70		
LSH	2	.27	2.11**		
Female animal B-IAT	2	.28	2.30**	.08	.025
<b>Model 2 (rape proclivity)</b>					
Hostile sexism	1	.10	0.84		
LSH	1	.44	3.51***	.23	.001
Hostile sexism	2	.07	0.60		
LSH	2	.43	3.60***		
Female animal B-IAT	2	.25	2.15**	.06	.036
<b>Model 3 (rape proclivity)</b>					
Hostile sexism	1	.10	0.84		
LSH	1	.44	3.51***	.23	.001
Hostile sexism	2	.08	0.66		
LSH	2	.44	3.66***		
Female object B-IAT	2	.27	2.40**	.07	.020

Note: RBA = rape-behavioral analogue; B-IAT = Brief Implicit Association Test; LSH = likelihood to sexually harass. The criterion for each model is in parentheses. Standardized regression coefficients are shown.

\*\**p* < .05. \*\*\**p* < .01.

B-IAT scores were dissociated from rape proclivity (and the RBA), it appears that Study 1's results were not dependent on using men as a contrast category in the IAT.

New to Study 2, objectifying women was associated with men's reported rape proclivity, suggesting that men who objectify women as a group are also more willing to use sexual aggression. However, the female object B-IAT was dissociated from the behavioral analogue and the LSH. Moreover, the female animal B-IAT was dissociated from the LSH, contrary to Study 1. This suggests that Study 1's finding of a link between the animal IAT and the LSH was dependent on using men as the contrast group. In Study 2, the only significant correlate of LSH was HS, but because LSH covaried with the RBA and rape proclivity, we used it to test the

incremental validity of the B-IATs, which were found to contribute significant variance to men's RBA and rape proclivity scores, even after accounting for LSH and HS.

## General Discussion

The present research uniquely found that automatically dehumanizing women is associated with men's sexual aggression. In Study 1, men who implicitly animalized women were more willing to rape and sexually harass them, and to report negative attitudes toward female rape victims. In Study 2, we used B-IATs to examine men's animalization and objectification of women independent of any associations with men. Thus, these measures assessed outgroup derogation unconfounded

with ingroup bias. Of importance, we used a RBA (Widman & Olson, 2011) in tandem with Study 1's measures of sexual aggression. Only animalizing women correlated with RBA scores, whereas both animalizing and objectifying women correlated with rape proclivity. Furthermore, in each study, the IATs were unrelated to men's interest in consensual sex, providing discriminant validity for our instruments. Finally, the IATs showed incremental validity in each study by accounting for unique variance in rape-related measures even after controlling for explicit measures.

Taken together, our results support theorists' assumptions that dehumanizing women as animals and objects plays a role in male sexual aggression. Female dehumanization (and not just objectification; Nussbaum, 1999) is associated with treating women (a) as a tool for men's own purposes (instrumentality), (b) as if there is no need to show concern for women's feelings and experiences (denial of subjectivity), and (c) as if it is permissible to damage women (violability). Whether the outcome measure was men's LSH, negative attitudes toward female rape victims, or rape proclivity, all three aspects were implicated in the present research.

### Limitations and Future Directions

In addition to instrumentality, denial of subjectivity, and violability, treating people as objects is also likely to involve ownership, denial of agency, and fungibility (i.e., seeing group members as interchangeable; Nussbaum, 1999). Future research should test whether men who automatically dehumanize women are also likely to be controlling and possessive of their intimate partners, to endorse gender stereotypes that attribute greater agency to men, and less likely to recognize individual women (e.g., in the Who Said What? paradigm; Stewart, Vassar, Sanchez, & David, 2000). In a study examining whether people made matching errors when they paired faces with bodies, the authors found that ideal women, ideal men, and average women were more fungible than average men (Gervais, Vescio, & Allen, in press), but the consequences of fungibility are yet to be determined.

The present research investigated young adult men, who may be especially likely to sexually aggress against women (Barbaree, Hudson, & Seto, 1993; Freeman, 2007). Nonetheless, future research should investigate older adults. Future research should also investigate other variables that likely inform female dehumanization. These include men's exposure to female-degrading pornography as well as other media that exploit women's bodies (Linz et al., 1988; Rudman & Borgida, 1995).

Because the present research cannot speak to causation, we cannot know whether men who are likely to sexually victimize women are also likely to dehumanize them (rather than vice versa). In Study 1, the implicit measures were administered last; in Study 2, they were administered first, and the relationships between animal IATs and rape proclivity were similar. Nonetheless, future research should attempt

to unravel the causal pathways. It is possible that men high on rape proclivity have a history of sexual aggression, and aggressive behavior has been linked to dehumanization (which fosters aggression toward inhumanized targets; Greitemeyer & McLatchie, 2011). It is also possible that men dehumanize women to the extent they feel their ingroup is responsible for victimizing them, as a means of justification (Castano & Giner-Sorolla, 2006; Čehajić, Brown, & Gonzalez, 2009). To test this idea, future research might investigate whether increasing the salience of men's responsibility for female rape victims yields increased female dehumanization.

There was a discrepancy between our two studies, such that the animal IAT was correlated with men's LSH only in Study 1. Nonetheless, because the animal IAT correlated with the rape proclivity measure in both studies, and with the RBA in Study 2, our research suggests that dehumanizing women likely plays a role in male sexual aggression. In addition, Study 2 diverged from Cikara et al.'s (2011) finding that men's HS scores were associated with implicitly objectifying sexualized women in that HS was dissociated from our female object B-IAT. Whether this is due to differences between the IATs (objectifying sexualized vs. personalized women in their case; objectifying more than humanizing women as a group in our Study 2) is a question for future research. Furthermore, HS was also dissociated from our animal IATs in both studies. The pattern suggests that men need not be sexist to automatically dehumanize women, but more research is necessary to warrant confidence in this conclusion.

Finally, we predicted that, on average, women would be associated with animals more so than men (who ought to be associated with humans more so than with animals). Instead, the *D* scores were near zero in both studies and target gender differences were not found. Theoretically, these results contradict Ortner's (1974) thesis. Empirically, our results are similar to past findings showing that sexualized women were not, on average, objectified more so than personalized women (Cikara et al., 2011), and that personalized women were not animalized more so than personalized men, and that sexualized women were not animalized more so than humanized (Vaes et al., 2011). Thus, women—whether sexualized or not—may be at low risk of automatic dehumanization. We view these results as a cause for optimism, with the caveat that our dehumanization measures were normally distributed, bolstering confidence in our tests of whether men who implicitly dehumanize women are also more likely to sexually victimize them.

### Conclusion

To our knowledge, the present research provides the first empirical investigation of female dehumanization and male sexual aggression. Both animalization and objectification were implicated (Haslam, 2006). Therefore, both feminist and social-psychological theorists are likely to be correct in

assuming that associating women with animals (Goldenberg et al., 2009; Ortner, 1974), or viewing them as objects (Fredrickson & Roberts, 1997), places women at risk for sexual victimization. Although tests of the causal direction are needed, we view the present research as a valuable starting point for future investigations that may illuminate the antecedents, moderators, and other significant consequences of men's automatic dehumanization of women.

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### Notes

1. The predictive utility of the Implicit Association Test (IAT) has been well established (for a meta-analysis, see Greenwald, Poehlman, et al., 2009). The Brief IAT is much newer than the IAT, but its psychometric properties are similar (Sriram & Greenwald, 2009), and a Black-White Brief IAT predicted voting intentions during the 2008 presidential election (Greenwald, Smith, Sriram, Bar-Anan, & Nosek, 2009). Furthermore, Brief IATs have been effectively employed in several studies of mental illness stigma (e.g., Rüscher, Corrigan, Todd, & Bodenhausen, 2010; Rüscher, Todd, Bodenhausen, Olschewski, & Corrigan, 2010; Rüscher, Todd, Bodenhausen, Weiden, & Corrigan, 2009).
2. Note that this description equally pertains to faster associations when categorizing men with culture, compared with categorizing women with culture.
3. Specifically, Order 1 consisted of categorizing women with animals, humans, and objects, followed by categorizing men with the same constructs, in the same order. Order 2 consisted of categorizing women with humans, animals, or objects, followed by categorizing men with the same constructs, in the same order. Order 3 consisted of categorizing women with objects, humans, and animals, followed by categorizing men with the same constructs, in the same order. Orders 4 to 6 were identical except that men were categorized with each construct before women were.
4. Of the sexually offensive images, 12 depicted rape (6 used classical paintings, 6 used magazine ads or other photos). Two photos depicted female bondage, and 3 photos were otherwise offensive (e.g., statue of a man with a large erection). Of the aggression images, 10 depicted war (6 used classical paintings, 4 depicted modern men in battle garb). Three photos portrayed men being assaulted by other men; 2 photos portrayed aggressive athletes; 1 photo depicted a man being gang raped (Dolce & Gabbana magazine ad), and 1 photo depicted a man with a bruised and bandaged face.

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