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# Differentiating Between Objectification and Animalization: Associations Between Women, Objects, and Animals

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Differentiating Between Objectification and Animalization:  
Associations Between Women, Objects, and Animals

by

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A thesis submitted in partial fulfillment  
of the requirements for the degree of  
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with a concentration in Psychology  
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## ABSTRACT

While it's clear that the objectification of women is a prominent feature of Western society, it is far less clear what it actually means to be objectified. Philosophers, feminist scholars and psychologist agree that objectification involves a denial of humanity, however, the nature of this dehumanization has yet to be explained. Although existing research provides evidence that objectified women are associated both with objects and animals, no research has examined the conditions under which women are likely to be dehumanized by one form or another. Here, I propose that *animalization*, characterized by an association with animals, occurs when a woman is portrayed in a sexualized manner. In contrast, *objectification*, characterized by an association with objects, occurs when a woman is portrayed with a focus on her appearance. Two studies were designed to test this hypothesis. Study 1 found that when participants were primed with an image of a sexualized woman, they were more likely to animalistically dehumanize her (which is consistent with likening to animals). Conversely, when participants were primed with an image of a "beautified" woman, they were more likely to mechanistically dehumanize her (which is consistent with likening to objects). Study 2 attempted to make this link more directly by measuring implicit associations between women, objects, and animals as a function of the image prime, but failed to find the hypothesized result. This research provides the first empirical evidence that different portrayals of women (either sexualized or with a focus on appearance) implicate different forms of dehumanization.

## INTRODUCTION

Although researchers (and lay people) agree that the objectification of women is a prominent feature of Western culture (permeating mainstream media, APA Task Force, 2007; Gill, 2003, and interpersonal interactions, Swim, Hyers, Cohen & Ferguson, 2001), what objectification actually means is far less evident. Philosophers and feminist scholars have suggested that at its core, objectification involves regarding a person as less fully human (e.g., Nussbaum, 1995; Dworkin, 1997). In the psychological literature, Fredrickson and Roberts (1997) proposed that objectification occurs when a woman's body is seen as capable of representing her, and developed a theory to highlight the negative consequences for women that follow from an increased focus on their physical appearance (e.g., Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998). More recent research, however, has examined objectification from the perspective of the objectifier and, consistent with philosophical theorizing, demonstrates empirically that objectified targets are denied many dimensions of humanity (e.g., Loughnan et al., 2010; Bernard, Gervais, Allen, Campomizzi & Klein, 2012). Dehumanization, however, is multidimensional, and research suggests that there are two distinct, but sometimes overlapping, senses of humanness. By virtue of this, there are two corresponding forms of dehumanization—one involving an association with animals, and another involving an association with objects (Haslam, 2006). Although most research assumes objectification to be dehumanizing by an association of women with objects (e.g., Bernard et al., 2012; Rudman & Mescher, 2012), other research finds that, at times, women are associated with animals (i.e., Vaes, Paladino, & Puvia, 2011). However, the conditions under which women are likely to be dehumanized by one form

or another have not yet been studied. This research will test a new framework for understanding how different portrayals of women implicate different forms of dehumanization, and offers the potential to reconcile many discrepancies in the existing literature.

In this research, I will review both philosophical and psychological perspectives on objectification, and present empirical evidence to support the notion that objectified women are associated both with objects, and with animals, but there are different antecedents to each of these forms of dehumanization. Specifically, I suggest that *animalization* is characterized by an association with animals, and occurs when a woman is portrayed as sexualized, or in terms of her usability for sexual desire or pleasure. In contrast, *objectification* is characterized by an association with objects, and occurs when a woman is portrayed with a focus on her appearance, or as an object of beauty. In both cases, women are perceived less like human beings. Finally, I will present the results from two studies providing the first empirical test of this model of dehumanization of women. Distinguishing and identifying the nature of this dehumanization can broaden the understanding of objectification, and may aid in reconciling existing discrepancies in the literature.



## PHILOSOPHICAL PERSPECTIVES ON OBJECTIFICATION

The concept of objectification has long interested philosophers and feminist theorists. The idea was first introduced by Immanuel Kant (1785/1963) when he suggested that objectified people are seen as merely a means to an end, and denied their humanity. Martha Nussbaum (1995) expanded on this idea by identifying seven key features of objectification, including instrumentality (treating as a tool for one's own use), fungibility (treating as if interchangeable with other things), inertness (regarding as lacking agency and activity), a denial of autonomy, ownership (treating as if one is something to be owned), violability (regarding someone as if they are permissible to violate), and a denial of subjective experience. Although Nussbaum notes that any person can be objectified, she suggests that more often than not, it is women who are subject to this kind of treatment.

Expanding on Nussbaum's defining features of objectification of women, Rae Langton (2009) offered three additional characteristics: a reduction to the body, a reduction to appearance, and silencing. In line with this, feminist scholar Sandra Bartky (1990) put forth the notion that it is the excessive preoccupation with women's appearance that leads to their objectification. Bartky links female objectification with Karl Marx's theory of alienation, in which he suggests that *fragmentation* is "the splintering of human nature into a number of misbegotten parts" (Ollman, 1977, p.135). Although for Marx fragmentation was most evident in capitalism and labor markets, Bartky believes that women undergo a kind of fragmentation in which "[their] entire being is identified with the body, a thing which... has been regarded as less inherently human than the mind or personality" (Bartky, 1990, p. 130).

Further, Bartky argues that this preoccupation with women's appearance leads women to treat themselves as objects designated only for the purpose of being adorned and observed. This, she says, is evidenced through the relentless pursuit of beauty perfection, leading women to spend countless hours ensuring their skin is soft, smooth, and hair-free, applying makeup to disguise any imperfections, and obsessing over diet and exercise. As a result, women come to believe they ought to exist in a way so as to "take up as little space as possible" (p. 73). Marion Iris Young (1990) adds to this argument by suggesting that for women, "Developing a sense of [their] bodies as beautiful objects to be gazed at and decorated requires suppressing a sense of [their] bodies as strong, active subjects..." (p. 61). In this vein, even idealized depictions of women, celebrated for their beauty or female appearance, leave women stripped of their humanity.

In addition to a focus on a woman's appearance as the root of objectification, other feminist theorists suggest that men's heterosexuality plays a prominent role in the perpetuation of objectification. As Kant (1963) suggested, it is through sexual desire that a person becomes "an Object of appetite for another" (p. 163). He even makes the claim that sexual activity leads to the loss, or "sacrifice of [one's] humanity" (p.163-164). Similarly, MacKinnon argues that objectification is created and sustained through men's consumption of pornography, in which women are "dehumanized as sexual objects, things, or commodities" (1993, p. 176). Andrea Dworkin (1997) takes a similar position by suggesting that through sexuality (and pornography, specifically), women become objects that may be bought and sold, or regarded only in terms of their instrumental use for sexual pleasure. A number of other feminist scholars agree that pornography reinforces the idea that men ought to treat women as objects to achieve a particular goal (that is, their own sexual pleasure, Assiter, 1989). As Rae Langton (2009) wrote, when men

use literal objects (in the form of pornographic images) as women, they in turn, “tend to use real women as objects” (p. 178).

## PSYCHOLOGICAL PERSPECTIVES ON OBJECTIFICATION

In psychology, researchers have taken the ideas proposed by philosophers and developed empirically testable predictions regarding both perceptions of the objectifier, and consequences for the objectified. Fredrickson and Roberts first put forth objectification theory (1997) to identify the consequences for women living in a culture where they are evaluated, in large part, on the basis of their body and appearance. More recently, social psychologists have taken a new perspective on objectification, examining the phenomenon from the point of view of the objectifier. These different, but complementary, approaches have helped to create a broad understanding of objectification.

### ***Objectification Theory: Self-Objectification and Appearance Focus***

From the perspective of objectification theory (Fredrickson & Roberts, 1997), women exist in a culture where their bodies are “looked at, evaluated, and always potentially objectified” (p. 175). The researchers suggest that this treatment of women can be found in interpersonal interactions, in which women are subjected to unreciprocated male gazes (Cary, 1978), often accompanied by sexually evaluative commentary (Swim et al., 2011), as well as in depictions of women in mainstream media (Kuhn, 1985; van Zoonen, 1994). Fredrickson and Roberts (1997) proposed that this ever-present potential for objectification leads women to internalize an outside observer’s perspective, “treat[ing] themselves as an object to be looked at and evaluated” (p. 177). They termed this phenomenon *self-objectification*.

Research stemming from this perspective typically involves manipulating self-objectification through a heightened focus on appearance, and assesses the consequences of

adopting this perspective on the self. In a study by Fredrickson et al. (1998), participants either tried on a swimsuit or a sweater alone in a dressing room. Results demonstrated that women, but not men, ate less and performed more poorly on a cognitive test after trying on the swimsuit, compared to the sweater. Similarly, Gervais, Vescio, and Allen (2011) demonstrated that women performed more poorly on a math exam after being gazed at by a male experimenter. Other research has shown that high self-objectification leads to reduced self-esteem and body satisfaction (Tiggemann, 2001), a lack of intrinsic motivation (Gapinski, Brownell, & LaFrance, 2003), and restrained movement (Harrison & Fredrickson, 2003). Further, studies have shown that high self-objectification is linked to decreased participation in social activism (Calogero, 2013), and talking less in interpersonal interaction (Saguy, Quinn, Dovidio & Pratto, 2010). Although the scope of the consequences of self-objectification is broad, collectively these results are in line with the position that heightened self-objectification leads women to regard themselves as having less of the qualities associated with being human (i.e., having a voice, mental ability, movement).

### ***New Approaches in Psychology: The Objectification of Others***

Researchers have recently begun exploring the processes and consequences of objectification from the standpoint of the objectifier, and have demonstrated that, in line with both original theorizing and evidence from the self-objectification literature, objectified others are perceived as less human. In a study examining person versus object recognition, researchers found that images of scantily clad women were recognized equally well upside down as right-side-up (as is characteristic of object perception); in contrast, images of half-clothed men, and fully clothed men and women, were recognized better right-side-up (consistent with person recognition; Bernard et al., 2012). Further, Gervais, Vescio, Forster, Maass, and Suitner (2012)

found that women's sexualized body parts (i.e., chest and waist) were better recognized when presented in isolation, compared to when they were presented in the context of the whole body. This reflects local processing, an underlying element of object perception. Conversely, male sexualized body parts were better recognized in the context of the whole body, consistent with global processing (which underlies person recognition, Seitz, 2002; Tanaka & Farah, 1993).

Additionally, research has examined attributions of humanness to objectified targets. For example, Heflick, Goldenberg, Cooper and Puvia (2011) found that women, but not men, were regarded as less competent, warm, and moral (traits considered principal dimensions of humanness; e.g., Fiske, Cuddy & Glick 2007) when participants were instructed to focus on their appearance, compared to focusing on who they are as a person. Additionally, women were judged to have less of the traits considered essential to human nature as a function of focusing on their appearance (Heflick & Goldenberg, 2009).

Other research has concentrated on two specific domains of humanness: experience (the ability to feel primary emotions) and agency (competence or higher-order functioning). According to various models in psychology, these features differentiate humans from non-humans (Fiske, Cuddy, Glick & Xu, 2002; Gray, Gray, & Wegner, 2007). In a study by Loughnan and colleagues (2010), sexualized targets were attributed less "mind" and moral patiency (i.e., the ability to feel hunger, pain, desire, etc.). Similarly, Gray, Knobe, Sheskin, Bloom and Feldman-Barrett (2011) demonstrated that sexualized women were seen as having less agency, but interestingly, perceptions of experience increased (this discrepant finding will be discussed in detail below).

Additionally, many studies have examined objectification by employing measures of associations of women with non-human concepts. Cikara, Eberhardt and Fiske (2011) found

that, for men high in hostile sexism, sexualized women were implicitly associated with first-person action verbs (i.e., “handle”) compared to third-person action verbs (i.e., “handles”). This, the researchers suggest, indicates that sexualized women were seen as being the objects of action, rather than the agents of action. Consistent with this conclusion, they found that men (high in hostile sexism) showed lowered brain activation in the region associated with attributing a mind or mental state to others, but only when viewing images of sexualized women. Further, Rudman and Mescher (2012) demonstrated that men’s implicit associations between women and both animal and object terms was positively correlated with their proclivity to rape women. Along the same lines, Vaes and colleagues (2011) found that objectified female targets were more quickly associated with non-human (animal) concepts, compared to non-objectified female targets. There were no comparable effects for male targets.

## OBJECTIFICATION AS DEHUMANIZATION

Taken together, the existing literature converges on the notion that objectified targets are regarded as less human; however, the exact nature of this dehumanization has yet to be explained. Sometimes women are associated with objects (Bernard et al., 2012), while other times they are associated with animals (Vaes et al., 2011). Research on dehumanization (Haslam, 2006) offers a framework for examining these two different forms of dehumanization, and the precursors to each. Understanding how these different forms of dehumanization map onto the objectification of women may help to explain some discrepancies in the existing literature and offer a better working definition for objectification.

### *The Nature of Dehumanization*

According to the framework proposed by Haslam (2006), there are two distinct forms of humanness, one involving uniquely human traits (UH; e.g., civility or refinement), and another involving traits essential to human nature (HN; e.g., emotionality, warmth or vitality). By virtue of this, there are two corresponding forms of dehumanization. When people are seen as lacking in civility, refinement, and socialized attributes (UH traits), they are regarded as coarse, uncultured, and amoral; further, this kind of dehumanization is consistent with likening to animals (termed *animalistic dehumanization*). Similarly, the denial of HN traits, such as warmth, openness, and depth, to others is associated with perceiving them as cold, rigid, and superficial, and is consistent with likening to objects or automata (termed *mechanistic dehumanization*; Haslam, 2006; Haslam, Loughnan, Reynolds & Wilson, 2007). Empirical research supports this, demonstrating that after participants read about a novel group low in UH



traits, they rated the group members as more animal-like; similarly, when participants read that the novel group was low in HN traits, they perceived group members to be more robot-like (Loughnan, Haslam & Kashima, 2009).

Haslam (2006) notes that these two distinct forms of dehumanization also elicit different emotional responses. Animalistic dehumanization is usually characterized by degradation and humiliation, often has a prominent bodily component (he gives the example of the nakedness of prisoners in Abu Ghraib), and is marked by more visceral responses. This is consistent with the work of Rozin, Haidt and McCauley (2000) in which they demonstrated that reminders of animal nature—including sexuality—elicit disgust responses. This, Haslam (2006) suggests, indicates that animalistic dehumanization involves seeing a person as lowered, debased, or sub-human. Mechanistic dehumanization, on the other hand, elicits a very different affective response. Rather than provoking responses of degradation and disgust, mechanistic dehumanization is often marked by indifference or emotional distancing. Mechanistically dehumanized others, he argues, are seen as non-human, rather than sub-human.

Haslam's (2006) conceptualization of dehumanization has clear overlap in the study of the objectification of women. Existing research has demonstrated that "objectified" women are sometimes the targets of mechanistic dehumanization (Heflick et al., 2011), while other times they are the targets of animalistic dehumanization (cf. Vaes et al, 2010); however no research has specifically examined when each form of dehumanization is likely to occur. A closer examination of differences in methodological approaches may shed light on the conditions that underlie the way in which women are dehumanized.

### ***Precursors of Dehumanization***

Researchers have induced objectification (of the self or others) in a variety of way, but broadly speaking, these manipulations can be classified into two categories: objectification through a heightened focus on appearance, and objectification through sexualization. In the literature on self-objectification, the manipulations are designed to heighten women's attention to their own appearance (e.g., trying on a swimsuit, Fredrickson et al., 1998; being gazed at by a male experimenter, Gervais et al., 2011), and although the outcomes have not directly measured associations of the self with objects, many of the negative consequences are consistent with this notion. For example, research showing that women restrict their movement (i.e., "throw like a girl"; Harrison & Fredrickson, 2003), talk less (Saguy et al., 2010), and perform more poorly on mental tasks (Fredrickson et al., 1998; Gervais et al., 2011) may suggest that women are, quite literally, coming to view themselves like an object.

Some studies examining the objectification of others have also employed similar appearance focus manipulations. Heflick and Goldenberg (2009) found that when participants were shown an image of a woman and instructed to focus on her appearance, compared to who she is as a person, they rated her as less competent, warm, and moral. While, again, this does not directly test the proposition that women are associated with objects as a function of heightened attention on their appearance, it is indicative of it. While a reduction in competence and morality could be suggestive of either form of dehumanization, a reduction of warmth is consistent only with mechanistic dehumanization. Providing even more direct evidence, Heflick et al. (2011) found that women, but not men, were denied traits considered essential to human nature (HN traits) as a function of focusing on their appearance. According to the model proposed by Haslam (2006), this form of dehumanization is consistent with likening to objects. Taken

together, these results may suggest that a focus on women's appearance prompts dehumanization by an association with objects. It is important to note that none of these manipulations of objectification contained a sexual component. In the study by Heflick and Goldenberg (2009), the targets consisted of well-known individuals, and participants were only shown an image of the person's face. In Heflick et al. (2011), participants watched videos of newscasters, dressed professionally and shown delivering a segment.

In contrast, other research utilizing manipulations that involve portraying targets as overtly sexualized have found different outcomes that are suggestive of dehumanization by an association with animals. Vaes and colleagues (2011), for example, found that images of sexualized women were more quickly associated with non-human, animal-like words (e.g., "paw", "snout"), compared to human words. Although the stimuli were chosen through pilot testing in which participants were asked, "How objectified is this person?" the researchers note that the images rated as highly objectified emphasized the person's body (sometimes only showing their body, or body parts), half-naked, or posed in a sexually provocative manner. Also providing support for this position, Gray and colleagues (2011) found across several studies that sexualized targets were attributed less agency (i.e., the ability to plan, self-control), but *more* experience (i.e., the ability to feel hunger, desire, pleasure). In a preliminary study on mind perception examining these two specific domains, Gray et al. (2007) established that animals (e.g., dogs, chimps) are viewed as low in agency-related traits, but high in experience-related traits. Thus, the results of Gray et al. (2011) may indicate that sexualized targets were equated with being animal-like. Further supporting this idea, this study demonstrated that the perceived sexual suggestiveness of the targets increased this effect.

Although some research has found that dehumanization effects of sexualized female

targets are specific to men (Cikara et al., 2010), most research demonstrates that both men and women dehumanize sexualized female targets (Vaes et al., 2011; Bernard et al., 2012; Gray et al., 2011). Further, research utilizing non-sexualized female targets (Heflick et al., 2011) has found no effect of participant gender on dehumanization outcomes. It is possible that men and women have different motives for dehumanizing sexualized and objectified female targets (see Vaes et al., 2011 for one explanation). However, the lack of gender differences in existing evidence seems to suggest that the dehumanization of female targets is less a function of the individual's feelings toward the target, and more about general assumptions regarding a particular kind of target (i.e., sexualized or with an emphasis on appearance).

While research has not yet attempted to distinguish differences in the nature of dehumanization, the outcomes of these studies may shed light on the antecedents of women being dehumanized by an association with objects, compared to animals. It seems evident that promoting a focus on women's appearance leads to dehumanization by an association with objects. This conclusion can be inferred from the literature on self-objectification, and was also directly demonstrated in the work by Heflick and colleagues (2011). Conversely, research that manipulates objectification through a prominent sexual component may not actually induce objectification, or not exclusively objectification. Specifically, it seems likely that presenting a woman in a highly sexualized manner would activate associations with animals. Anecdotal evidence suggests that sexualized women are, at times, animalized (e.g., "cougars"; "foxes"). Indeed, the work by Vaes et al. (2011) demonstrated that sexualized female targets were more quickly associated with animal concepts, and the findings of Gray et al. (2011) are consistent with this notion. Directly distinguishing these differences will help to broaden the understanding of objectification, and clarify many of the discrepancies in the existing literature.



## OVERVIEW OF RESEARCH AND HYPOTHESES

Drawing on existing evidence, the aim of the current research was to distinguish objectification from animalization, and show how two different portrayals of women implicate different kinds of dehumanization. Specifically, this research sought to determine if priming women as sexually provocative will lead to dehumanization by an association with animals, while priming women as “beautified” (or with a focus on appearance) will lead to dehumanization by an association with objects. Two studies tested this hypothesis using both explicit and implicit measure of dehumanization. This research is the first to attempt to identify objectification and animalization as two separate constructs by determining the precursors to each, and help to further clarify the picture of conditions under which women are likely to be dehumanized by one form or another.

### ***Study 1: Explicit Dehumanization***

The aim of Study 1 was to demonstrate that female targets would be dehumanized either by an association with objects, or an association with animals, as a function of how the target is presented. This study used the methodology developed by Haslam (2006) to assess both mechanistic dehumanization and animalistic dehumanization and had two specific hypotheses:

*Hypothesis 1:* Participants primed to think of a woman as sexualized will score higher on a measure of animalistic dehumanization of the woman, compared to participants primed to think of the target as personified or beautified. Because prior research has found inconsistencies with regard to participant gender and the dehumanization of women (e.g., Heflick et al., 2011; Vaes et al., 2011; Cikara et al., 2010), I did not have specific predictions for participant gender effects;

however, I included it in the analysis as a variable of interest.

*Hypothesis 2:* Participants primed to think of a woman as beautified will score higher on a measure of mechanistic dehumanization of the woman, compared to participants primed to think of the target as personified or sexualized. Again, I did not offer specific predictions for gender differences, but it was included in the analysis.

While prior research suggests that dehumanization is not a function of the individual perceiver's feelings toward a target, but about assumptions about the target in general (this is the basis for not expecting an effect of gender for either hypothesis; Heflick et al., 2011; Bernard et al., 2012; Vaes et al., 2011), it is possible that men may sexualize an attractive female, even when she is not presented in a sexualized manner. Therefore, gender was included as a between-subjects factor in my analysis.

## Method

### *Participants*

Two hundred and twenty participants were recruited online through Amazon mTurk and compensated \$0.25 for their participation.<sup>1</sup> The sample consisted of 92 males, 108 females, and 20 people who did not report their gender. Participants ranged in age from 18 to 72 with a mean age of 33.32 ( $SD = 11.62$ ).

### *Materials*

Images Prime. To prime participants to think of women as either sexualized, beautified, or as a person (to serve as a control condition), participants were shown an image of a woman and asked to examine it for a few moments. The purported purpose of this is that the study was to examine how people form impressions, and they were told that they would be asked to make

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<sup>1</sup> Participants who did not have a value for the dependent measures were not included in the analysis.

assessments of the person in the photograph later in the study. The images selected for each condition were found through an online image search, and feature a woman of approximately the same size and age, with blonde hair, and approximately the same proportion of her body shown in each photo. The images were resized to be equivalent, and the woman in each was cropped into a gray background. The sexualized image depicts a woman wearing little clothing, with her body and face posed provocatively. The beautified image features a model wearing a dress and hat, and looking away from the camera. The personified image depicts a woman wearing jeans and a long-sleeved shirt, holding a stack of book, and smiling into the camera. To enhance the manipulations, each image was presented with a descriptive frame of reference. The sexualized image had the frame, “Pornographic Film Actress”; the beautified image had the frame, “International Fashion Model”; and the personified image had the frame, “Graduate Student.”

Pilot testing was conducted to ensure that images differed significantly on dimensions of sexuality, glamour, and personhood. Participants ( $N = 52$ ), recruited online through Amazon mTurk and compensated \$0.10 for their participation, were shown one of the three images, with the descriptive frame, and asked to answer several questions about the woman in the photo. Results revealed that the women did not differ in how attractive they were perceived to be ( $p = .36$ ), but they did differ on several other critical variables. Participants rated the sexualized woman significantly higher on the question, “How much do you think this woman is valued for her sexuality?” (from 1, *not at all* to 7, *very much*) compared to the beautified and personified woman,  $F(2, 49) = 7.17, p < .01$ . Additionally, participants rated the beautified woman significantly higher on the item, “How glamorous is this woman?” compared to the sexualized and personified images,  $F(2, 49) = 3.29, p < .05$ . Finally, the three images differed significantly from each other in response to the question, “How much do you think this woman is valued for



who she is as a person?"  $F(2, 49) = 17.44, p < .001$ . The personified image was rated as significantly higher, compared to the beautified and sexualized images ( $ps < .01$ ). In addition, the beautified image was rated significantly higher compared to the sexualized image ( $p < .01$ ). These results suggest that the images do differ significantly on the critical dimensions, and were appropriate for use in the study.

Dehumanization. To measure dehumanization, participants were first instructed to determine the extent to which 25 traits (e.g., competent, trustworthy; from Haslam et al., 2005) described the woman in the photo, and subsequently how much "each of the following traits are essential to human nature (what most characterizes being human)" (from 1, *not at all* to 5, *entirely*), or how unique they are to humans (from 1, *entirely shared with animals*, to 5, *entirely unique to humans*; Appendix A). Within-person correlations were conducted on how much each trait describes the woman and the participants' human nature ratings for each trait and human uniqueness rating for each trait (e.g., Heflick & Goldenberg, 2009; Paladino, & Vaes, 2009). These raw scores were then subtracted from one, yielding a score that ranges from 0 to 2, with higher values reflecting a greater degree of (mechanistic or animalistic) dehumanization. All participants first completed the woman-trait ratings, and the subsequent dehumanization subscales were counterbalanced between participants.

Valence. To rule out the alternative explanation that the dehumanization effects are a result of affective reactions to the targets (and not likening to objects or animals), participants were also asked to judge the traits on how desirable they are to possess (from 1, *very undesirable* to 5, *very desirable*). Again, within-person correlations were conducted between how much each trait describes the woman and the valence ratings of the traits.

Demographics and Reactions. Participants completed a short demographic questionnaire that assessed age, gender, race, ethnicity, and sexual orientation. Further, this questionnaire probed for any suspicions and assessed reactions to the female target, including how attractive participants perceived her to be. (Appendix B).

## Results

Participants' mechanistic dehumanization scores were analyzed using a 3 (Image prime: sexualized, beautified, personified) X 2 (Order: HN first, UH first) X 2 (Participant gender: male, female) analysis of variance (ANOVA). A main effect of the image prime emerged,  $F(2, 169) = 5.96, p < .01$ . There was not a main effect of gender, and it did not interact with any other variables ( $ps > .24$ ). There was also not a main effect of order ( $p > .70$ ), however order did interact with the image prime,  $F(2, 169) = 3.25, p < .05$ . Partially supporting my hypothesis, post hoc tests revealed that for participants who completed the HN (mechanistic dehumanization) scale first, the beautified image was rated significantly higher than the personified image ( $p < .001$ ) and the sexualized image ( $p < .05$ ; see Figure 1). Additionally, the sexualized image was rated significantly higher than the personified image ( $p < .05$ ). There were no significant differences by image prime for participants who completed the UH (animalistic dehumanization) scale first ( $ps > .54$ ).

To examine animalization, the same 3 (Image prime: sexualized, beautified, personified) X 2 (Participant gender: male, female) X 2 (Order: HN first, UH first) mixed between-within analysis of variance (ANOVA) was conducted on participants' animalistic dehumanization scores. Again, there was a main effect of the image prime,  $F(2, 179) = 3.76, p < .05$ . There was not a main effect of gender, and it did not interact with any other variables ( $ps > .36$ ). There was a main effect of order,  $F(1, 179) = 4.73, p < .05$ , with participants given the animalistic

dehumanization subscale first scoring lower ( $M = 1.01$ ,  $SD = .214$ ) than those given the animalistic dehumanization subscale second ( $M = 1.09$ ,  $SD = .265$ ). This time, however, order did not interact with the image prime ( $p = .66$ ). Supporting my hypothesis, post hoc test revealed that the sexualized image was rated significantly higher than the beautified image ( $p < .01$ ) and the personified image ( $p < .05$ ). The beautified image and personified image did not differ significantly from each other ( $p > .23$ ). These means are presented in Figure 2.

To test the alternative explanation that the dehumanization effects are due to viewing the target more negatively, a 3 (Image prime: sexualized, beautified, personified) X 2 (Participant gender: male, female) ANOVA was conducted on participants' valence scores. A main effect of the image prime emerged,  $F(2, 190) = 33.12$ ,  $p < .001$ , and post hoc test showed that the personified image was rated significantly more positively than the sexualized and beautified images ( $ps < .001$ ). Importantly, the sexualized and beautified images did not differ from each other ( $p > .90$ ), and thus cannot account for differences in dehumanization between these targets. Further, controlling for valence did influence any of the significant effects. Additionally, there was no difference in perceived attractiveness of the female target between the image primes ( $p = .53$ ) and controlling for perceived attractiveness did not influence the significant effects.

## Discussion

The results of Study 1 support my hypothesis that female targets are dehumanized either by an association with objects or an association with animals as a function of how they are portrayed. Participants reported greater animalistic dehumanization of the sexualized target, compared to the beautified and personified target. Additionally, the beautified woman was mechanistically dehumanized more, compared to the sexualized and personified women (for

participants who completed the mechanistic dehumanization subscale first). Further, there was no effect of participant gender—both men and women dehumanized the female targets.

While the order of the dehumanization subscales did not influence animalistic dehumanization, it did affect mechanistic dehumanization scores. Only participants who were given the HN subscale first responded with increased mechanistic dehumanization of the beautified target; the image prime had no influence on dehumanization scores for those given the HN scale second. This may be because HN ratings are much more nuanced than UH ratings, and more likely to be influenced by first having completed the UH scale. Although both subscales are subjective responses, the UH scale anchors provide fairly concrete instruction—participants must rate whether traits are shared with animals or unique to humans. Conversely, the HN scale anchors are highly abstract, asking participants to judge how much a trait is “essential to human nature.” It is likely that this is a more difficult assessment to make, and more sensitive to influence from prior information. But importantly, the order in which the significant effects emerged was when the mechanistic dehumanization scale came first, and there was no possibility of contamination from a prior measure.

Although I did not predict an effect of valence, the personified image was rated significantly more positively than the sexualized and beautified images. This is perhaps not surprising, especially given the descriptive frame that accompanied each photo. It is not surprising that the graduate student was rated as having more positive traits than the fashion model or the pornographic film actress. But critically, there was no difference in valence ratings between the beautified and sexualized images. This suggests that the specific form of dehumanization of both the beautified and sexualized images cannot be explained by an emotional response to the target.

## ***Study 2: Implicit Dehumanization***

Study 2 was designed to provide further empirical evidence differentiating between objectification and animalization using an implicit measure, and to demonstrate more directly that sexualization leads to an association with animals, while beautification or appearance focus leads to an association with objects. Participants were shown images of the same female targets used in Study 1 (portrayed as either sexualized, beautified, or personified) and subsequently completed an implicit association test. This study had two specific hypotheses:

*Hypothesis 1:* Participants primed to think of a woman as sexualized will more quickly associate women words with animal words (compared to human words) than participants primed to think of the woman as beautified or as personified. I did not have specific predictions for gender differences, but I included it as a factor in the analysis.

*Hypothesis 2:* Participants primed to think of a woman as beautified will more quickly associate women words with object words (compared to human words) than participants primed to think of the woman as sexualized or as personified. Again, I did not have specific predictions for gender differences.

## Method

### *Participants*

Three hundred and eight participants were recruited online through Amazon mTurk and compensated \$0.35 for taking part in the study. The sample consisted of 158 men, 148 women and two participants who did not report their gender. Participants ranged in age from 18 to 70 with a mean age of 33.23 ( $SD = 11.71$ ).

## Materials

Image Primes. To prime female targets as sexualized, beautified, or personified, participants were shown one of the image primes used in Study 1 and told they would be asked questions about the woman in the photo later in the study.

Implicit Association Test. To measure the strength of a single association, in a non-comparative context, participants were presented with the Single-Category Implicit Association Test (SC-IAT; Karpinski & Steinman, 2006). In this task, participants sorted 15 stimuli words into two attribute categories, and one target category. In the object IAT, the attribute categories were *object* (words: vase, bicycle, ottoman, mug, table) and *human* (words: human, culture, person, tradition, society), and the target category was *woman* (words: woman, she, her, female, lady). The animal IAT used the same target category (woman), but the attribute categories were human and *animal* (words: horse, rabbit, fish, squirrel, duck).

The stimuli words for the *object* and *animal* attribute categories were chosen through pilot testing to ensure that they did not differ on dimensions of gender or valence. Participants ( $N = 125$ ), recruited online through Amazon mTurk and compensated \$0.20 for taking part in the study, were shown several words and instructed to, “rate the extent to which the word is associated with a specific gender” (from 1, *masculine* to 9, *feminine*, with 5 marked as *neutral*). Next, participants were instructed to rate the positivity or negativity of each word (from 1, *negative* to 9, *positive*, with 5 marked as *neutral*). Within each scale the words were presented in random order. Results revealed that the mean of the gender ratings for object words ( $M = 5.11$ ) did not differ significantly from the mean of gender ratings for animal words ( $M = 5.04$ ),  $t(124) = .94$ ,  $p = .35$ . Similarly, valence ratings for object words ( $M = 5.46$ ) did not differ significantly from valence ratings for animal words ( $M = 5.49$ ),  $t(124) = -.48$ ,  $p = .63$ .

## Procedure

Participants completed all materials online. After indicating consent to participate, they were randomly assigned to one of the three images (sexualized, beautified, personified) and asked to examine it for a few moments. They then completed the implicit association test, and were randomly assigned to either the object IAT, or animal IAT. The test consisted of five blocks. The first block was an evaluative training block in which the two attribute categories appeared at the top left and right corners of the screen (e.g., “Object” and “Human”). Participants were instructed to categorize the words using the “e” key for the left category, and the “i” key for the right category. They were told that the goal of the task is to respond as quickly and accurately as possible. The second block consisted of the same attribute categories, with the target category listed on the left hand side of the screen (i.e., “Object OR Woman”). In the third block, the pairings remained the same. In the fourth block of the task, the target word switched sides to be paired with the second attribute word (i.e., “Object OR Woman”). In the final block, the pairings again remained the same as the previous block. The order of the presentation between compatible (e.g., “Object + Woman”) and incompatible (e.g., “Human + Woman”) pairings was counterbalanced between participants. A summary of the test blocks and trials is presented in Tables 1-4.

Demographics and Reactions. Participants completed the same demographic questionnaire and reactions to the female targets used in Study 1.

## Results

Reaction time on the IAT was computed using the *D*-score algorithm developed by Greenwald, Nosek, and Banaji (2003). This formula computes the log-transformed mean difference in reaction time between compatible and incompatible trials, such that higher scores

indicate faster performance on the compatible trials (i.e., *women + object*; *women + animal*) compared to the incompatible trials (i.e., *women + human*). To test my hypotheses, reaction time was analyzed using a 3 (Image prime: sexualized, beautified, personified) X 2 (IAT type: object IAT, animal IAT) X 2 (Trial order: compatible first, incompatible first) X 2 (Participant gender: male, female) mixed between-within analysis of variance (ANOVA).

Results revealed one marginally significant interaction between the image prime, participant gender and IAT type,  $F(2, 281) = 2.95, p = .054$ . Simple interaction analysis indicated that the Image X Gender interaction was significant for participants in the Animal IAT condition,  $F(2, 141) = 3.93, p < .05$ , but not for participants in the Object IAT condition ( $p = .96$ ). To further understand the significant interaction in the Animal IAT, pairwise comparisons were conducted. Results showed that the image prime significantly influenced female participants reaction time scores,  $F(2, 141) = 3.39, p < .05$ , but had no influence on male participant's reaction time scores ( $p = .30$ ). In contrast to my hypothesis, women were significantly slower in associating women with *animal* words after they were shown the sexualized image prime, compared to when they were shown the beautified or personified images.

Additionally, there was a marginal Image X Gender X IAT Type X Order interaction,  $F(2, 281) = 2.73, p = .067$ . To deconstruct this effect, simple interaction analyses were conducted split by IAT type. Results revealed that for participants who completed the Animal IAT, there was a significant three-way interaction between Image, Gender, and Order,  $F(2, 135) = 3.43, p < .05$ . This interaction was non-significant for participants who completed the Object IAT ( $p = .12$ ). To further break down the three-way interaction in the Animal IAT condition, I conducted a simple interaction analysis split by Order. Results indicated that the two-way interaction



between Image and Gender was significant only for participants in the compatible first order,  $F(2, 58) = 8.58, p < .001$  ( $p = .86$  in the incompatible first order). Counter to my hypothesis, female participants in the compatible first order who were shown the sexualized image prime were *slower* at associating women with animals, compared to those shown the beautified and personified image,  $F(2, 58) = 6.42, p < .01$ . Additionally, there was a significant effect of image prime for male participants in the compatible first order,  $F(2, 58) = 3.24, p < .05$ . Consistent with my hypothesis, men in this condition were faster at associating women with animals when they were shown the sexualized image, compared to when they were shown the beautified image (there was no difference in reaction time between the sexualized and personified image primes). A summary of these means is presented in Table 1.

I also examined perceived attractiveness of the targets as a function of the image prime. A marginal effect emerged,  $F(2, 298) = 2.49, p = .084$ , with the personified image rated as more attractive than the sexualized or beautified images. However, controlling for perceived attractiveness did not influence any of the marginal interactions.

Among the demographic items included in the study, participants were also asked, “How much is this woman valued for her appearance?” and “How much is this woman valued for her sexuality?” (from 1, not at all to 7, very much). Because there appeared to be no reliable effect of the image primes, I examined IAT scores as a function of these self-reported, individualized perceptions of the targets. To do this, I conducted correlations between reaction time on the IAT and the item assessing perceived value for appearance, and perceived value for sexuality. There was a significant positive correlation for male participants given the Object IAT between reaction time and how much they believed the woman (across all image primes) was valued for her appearance,  $r(79) = .25, p < .05$ . Specifically, the more men believed the woman was

valued for her appearance, the faster they were at associating women with objects. This correlation was non-significant for female participants ( $p = .82$ ). Additionally, there was also a marginally significant, positive correlation for male participants given the Animal IAT between how much they believed the woman was valued for her sexuality and reaction time,  $r(79) = .21$ ,  $p = .06$ . Again, this indicates that the more men believed the female target was valued for her sexuality, the faster they were at associating women with animals. This correlation was non-significant for women ( $p = .42$ ). Further, these correlations were specific to the respective IAT type. In other words, there was no correlation between men's appearance value ratings and reaction time if they were given the Animal IAT ( $r = .055$ ,  $p = .63$ ), and no correlation between men's perceived sexuality value of the targets and reaction time if they were given the Object IAT ( $r = .049$ ,  $p = .68$ ).

### Discussion

The results of this study did not support the hypothesis that the image prime would prompt dehumanization by an implicit association with either objects or animals. Although there were some marginal interaction effects, deconstructing the interactions revealed some effects that were somewhat consistent with my hypothesis, and others that were counter to my hypothesis. There are several reasons why this may be the case. First, the IAT stimuli words differed in how they mapped on to the overall category. The stimuli words for the "human" and "women" categories were words that related to the *concepts* of humans and women (e.g., *culture, tradition; she, her*). In contrast, the stimuli words for the "object" and "animal" categories represented *actual* objects and animals (e.g., *bicycle, vase; squirrel, fish*). It may be that mentally switching from categorizing these different types of stimuli was too difficult. There is some evidence to support this conclusion: While individual differences might typically create a scenario in which

the overall mean is close to zero, the mean of reaction times in this study was  $-.31$  ( $SD = .29$ ), indicating a tendency for participants to be faster in associating women and human words (in which the stimuli words were more categorically similar).

Further, this task measured dehumanization of women *in general* as opposed to dehumanization of a specific target. Dehumanization in response to the image primes may be specific to that target (as in Study 1) and may not generalize to other women. Alternatively, individual differences may moderate whether primes like the ones used in this study produces generalized dehumanization of all women (for example, men high in hostile sexism; cf. Cikara et al., 2010).

While the correlational evidence should be interpreted with caution, it provides some evidence that, for men, perceptions of women as sexualized is related to dehumanization by an association with animals, and perceptions of women with a focus on appearance is related to dehumanization by an association with objects. Although the image primes did not have the intended effect, when male participants perceived the women (regardless of image prime) as being highly valued for her sexuality, they were faster at associating women with animals. Additionally, when male participants perceived the woman in the image as being highly valued for her appearance, they were faster in associating women with objects. This is suggestive of the possibility that, for men, these two different perceptions of women are linked to two different forms of dehumanization of women in general.

## GENERAL DISCUSSION

This research takes an important step in identifying the antecedents of two different forms of dehumanization of women. Study 1 showed that when a woman is presented as sexualized, she is more likely to be animalistically dehumanized, while presenting women as beautified is more likely to induce mechanistic dehumanization. In the existing literature, these two different portrayals of women have been lumped under the umbrella term of “objectification,” and a variety of measurements have been used to examine both the construct and consequences of such objectification. As a result, there is a lack of consistency in both the operationalization and outcomes of objectification. This research offers a new framework for understanding the dehumanization of women as objectification, or an association with objects, in contrast to an association with animals. Further, it suggests that the manner in which a woman is portrayed, either with a focus on appearance, or as sexualized, implicates different kinds of dehumanization.

It is important to note that in Haslam’s (2006) conceptualization of dehumanization, mechanistic and animalistic dehumanization can overlap; that is, a person may be simultaneously mechanistically and animalistically dehumanized. In Study 1, this was the case for mechanistic dehumanization of the female target. Results indicated that while the beautified target was mechanistically dehumanized to the greatest degree, the sexualized target was also mechanistically dehumanized more than the personified target. However, this was not the case with animalistic dehumanization—only the sexualized target was animalistically dehumanized, and there was no difference between the beautified and personified targets. This may suggest

that objectification occurs for both sexualized and beautified targets (though to a greater degree for beautified targets), but animalization of women is a specific outcome of sexualization.

Indeed, there is some evidence for this. Prior research has shown that sexualized women are associated both with objects and animals (Rudman & Mescher, 2011; Vaes et al., 2011), and are also perceived more similarly to objects (Bernard et al., 2011). However, research that has used measures of appearance focus to induce objectification has only focused on outcomes consistent with objectification (Heflick et al., 2011), and not animalization. This is the first research to manipulate appearance focus and directly measure animalization; future studies should validate this finding with additional manipulations of appearance focus and measures of animalization.

Additionally, Study 1 found that the gender of the perceiver did not affect either form of dehumanization of the female target. Although existing research has found mixed results with regards to perceiver gender (e.g., Cikara et al., 2010; Heflick & Goldenberg, 2011), there may be important differences in the motivation to dehumanize a (sexualized or beautified) woman. For example, Vaes and colleagues (2011) found preliminary evidence suggesting that men's (animalistic) dehumanization of a sexualized woman was moderated by their sexual attraction toward the woman. Conversely, the researchers found that the more female participants distanced themselves from the sexualized female target, the more they dehumanized her. It may be that men's dehumanization of women is motivated by the targets perceived usefulness (for sexual pleasure or otherwise), while women's dehumanization of other women is motivated by a desire to see the self as distinct from the female target. Further, the motivation to dehumanize women may depend on the portrayal of the woman, and the type of dehumanization that is implicated. In other words, men's motivation to dehumanize a sexualized female target may be

different than the motivation to dehumanize a beautified female target. Future research would benefit from examining these potential moderators.

Study 1 conceptualized dehumanization according to Haslam's (2006) model in which animalistic dehumanization is marked by a denial of uniquely human traits to another (e.g., civility, refinement) and is consistent with perceiving the person as animal-like, while mechanistic dehumanization is marked by the denial of human nature attributes to others (e.g., emotional warmth, openness) and is consistent with perceiving the person as object-like. Study 2 attempted to make this connection more directly using an implicit association task to measure animal- and object-like perceptions of the female targets, but failed to find the hypothesized result. One important methodological factor (e.g., differences in IAT stimuli words) was offered to potentially account for the lack of effects. Still, it is possible that the non-significant effects represent a true null finding: Dehumanization, induced by portrayals of a woman as sexualized or with a focus on appearance, may not extend beyond the specific target to women in general. Although this study had several inconsistencies in the results, there was a clear effect of participant gender. Specifically, female participants given the Animal IAT displayed a pattern opposite to what I had hypothesized, responding with the slowest women/animal associations after being primed with the sexualized image (while male participants showed a pattern more in line with my hypothesis). This is in contrast to Study 1, in which both males and females dehumanized the targets in a similar manner. It may be that female participants in Study 2 were especially resistant to associate women with animals because "women" represents a category to which they belong. This suggests that gender differences may be critical to consider when assessing dehumanization of a specific female target, versus women as a whole.

Additionally, Haslam's (2006) measure of dehumanization may reflect something slightly different than an implicit association with objects or animals. For example, his conceptualization suggests that when people are denied HN traits, they are perceived as possessing the same qualities that objects possess (i.e., rigid, superficial, passive). The implicit association test, however, measures the strength of automatic mental associations between women and objects. It seems plausible that these are not measuring the same thing, or may be tapping into different cognitive processes. For example, Greenwald and Banaji (1995) suggest that explicit stereotypes are the result of intentional, conscious thought, while implicit stereotypes are learned through experience and operate outside of conscious cognition. It may be that the dehumanization of women requires a conscious, evaluative judgment of the target (as measured by the mechanistic and animalistic dehumanization scales), as opposed to unconscious attribution of certain qualities to women (as measured by the IAT).

Despite Study 2's non-significant findings on the hypothesized outcome, there is some correlation evidence supporting the proposed model of dehumanization of women: The more men perceived the female target to be valued for her sexuality, the more they associated women with animals. Similarly, the more men perceived the female target to be valued for her appearance, the more they associated women with objects. Although these findings should be interpreted with caution, they do suggest that 1) perceptions of women as beautified vs. sexualized are related to different forms of dehumanization and 2) these types of dehumanization of women *in general* may be specific to certain individuals (in this case, men). In the future, research should address the methodological concerns brought up in this study, as well as explore individual differences that might moderate dehumanization effects.

*Conclusion.*

This research takes an important first step in the study of the dehumanization of women. The results of the first study provide a framework for more accurately understanding how different portrayals of women, either with a focus on appearance, or as sexualized, implicate different (but sometimes overlapping) forms of dehumanization. In light of the inconsistencies and lack of effects in Study 2, future research is needed to demonstrate both replication and clarify certain discrepancies. Additionally, future research would benefit from examining gender differences in the motivation to dehumanize a sexualized or beautified woman. Still, the results of Study 1 have important implications for refining the study of “objectification” and dehumanization; by clarifying the antecedents of the dehumanization of women, better predictions can be made concerning its consequences.



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## APPENDICES

*Appendix A: Dehumanization Scales*

To what extent are the following traits typical of **the woman you viewed in the picture?** To respond, mark the box that corresponds with your opinion.

Very Atypical of the Celebrity	Somewhat Atypical of the Celebrity	Neither Typical or Atypical of the Celebrity	Somewhat Typical of the Celebrity	Very Typical of the Celebrity
---	---	--	--	--

Competent

Capable

Pure

Active

Tolerant

Innocent

Shy

Fun-Loving

Civilized

Clean

Friendly

Polite

Curious

Jealous

Thorough

Impatient

Emotional

Sincere

Trustworthy

Intelligent

Which of the following traits are **essential to human nature**? To respond mark the box that corresponds with your opinion.

	Very Unessential to Human Nature	Somewhat Unessential to Human Nature	Neither Essential or Unessential to Human Nature	Somewhat Essential to Human Nature	Very Essential to Human Nature
Competent					
Capable					
Pure					
Active					
Tolerant					
Innocent					
Shy					
Fun-Loving					
Civilized					
Clean					
Friendly					
Polite					
Curious					
Jealous					
Thorough					
Impatient					
Emotional					
Sincere					
Trustworthy					
Intelligent					



Which of the following traits are **experienced solely by human beings and not experienced by animals**? To respond mark the box that corresponds with your opinion.

	Entirely Shared with Animals	Somewhat Shared with Animals	Neither Shared with Animals nor Unique to Humans	Somewhat Unique to Humans	Very Unique to Humans
Competent					
Capable					
Pure					
Active					
Tolerant					
Innocent					
Shy					
Fun-Loving					
Civilized					
Clean					
Friendly					
Polite					
Curious					
Jealous					
Thorough					
Impatient					
Emotional					
Sincere					
Trustworthy					
Intelligent					

To what extent are the follow traits **desirable** to possess? Please mark the box that corresponds with your opinion.

Very Undesirable	Somewhat Undesirable	Neither Desirable nor Undesirable	Somewhat Desirable	Very Desirable
---------------------	-------------------------	---	-----------------------	-------------------

Competent

Capable

Pure

Active

Tolerant

Innocent

Shy

Fun-Loving

Civilized

Clean

Friendly

Polite

Curious

Jealous

Thorough

Impatient

Emotional

Sincere

Trustworthy

Intelligent

*Appendix B: Demographic Questionnaire*

**Please indicate the unique ID code that was generated for you in the HIT. Note: This is not your Amazon Work ID: \_\_\_\_\_**

What is your gender? Female Male

Please indicate your age: \_\_\_\_\_

Please identify your ethnic group:  
Hispanic or Latino  
Not Hispanic or Latino

Please identify your race:  
American Indian or Alaska Native Native Hawaiian or other Pacific Islander  
Asian White  
Black or African American More than one race

What is your sexual orientation?  
Heterosexual  
Homosexual  
Bisexual

Is English your primary language?  
No Yes

Did you have any trouble understanding any of the language in this study?  
No Yes

How attractive did you find the person you viewed in the photo?

1 2 3 4 5  
Very Unattractive Very Attractive

How much do you think this woman is valued for her sexuality?

1 2 3 4 5  
Not at all Extremely

How much do you think this woman is valued for her appearance?

1 2 3 4 5  
Not at all Extremely

How much attraction did you feel toward the person you saw in the photo?



## Appendix C: IRB Approval Letter



RESEARCH INTEGRITY AND COMPLIANCE  
Institutional Review Boards, FWA No. 00001669  
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799  
(813) 974-5638 • FAX (813) 974-7091

April 25, 2013

Kasey Morris  
Psychology  
4202 East Fowler Ave, PCD4118G  
Tampa, FL 33620

RE: **Exempt Certification**  
IRB#: Pro00012890  
Title: Perceptions of Women

**Study Approval Period: 4/25/2013 to 4/25/2018**

Dear Ms. Morris:

On 4/25/2013, the Institutional Review Board (IRB) determined that your research meets USF requirements and Federal Exemption criteria as outlined in the federal regulations at 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:  
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Approved Documents:

[MorrisKasey-ThesisProposal.pdf](#)

[Online mTurk Study 1, Ver.#1, 4.24.13](#)

[Online mTurk Study 2, Ver.#1, 4.24.13](#)

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF IRB policies and procedures. Please note that changes to this

## Appendix D: Additional Tables and Figures

### Tables 1-4. Summary of IAT Test Blocks

Table 1. Category assignment and stimulus proportions across ST-IAT blocks (Animal IAT).

Block	Task description	Left key concepts	Right key concepts
1	Evaluative training	Animal	Human
2	Initial block	Animal + Women	Human
3	Duplicate block	Animal + Women	Human
4	Reversed block	Animal	Human + Woman
5	Duplicate block	Animal	Human + Woman

\*Note: Initial block and reversed block presentation order will be counterbalanced between participants.

Table 2. Number of stimuli per block (Animal IAT).

Block	Animal	Human	Woman
1	10	10	—
2	10	10	10
3	20	20	20
4	10	10	10
5	20	20	20

Table 3. Category assignment and stimulus proportions across ST-IAT blocks (Object IAT).

Block	Task description	Left key concepts	Right key concepts
1	Evaluative training	Object	Human
2	Initial block	Object + Women	Human
3	Duplicate block	Object + Women	Human
4	Reversed block	Object	Human + Women
5	Duplicate block	Object	Human + Women

\*Note: Initial block and reversed block presentation order will be counterbalanced between participants.

Table 4. Number of stimuli per block (Object IAT).

Block	Object	Human	Women
1	10	10	—
2	10	10	10
3	20	20	20
4	10	10	10
5	20	20	20

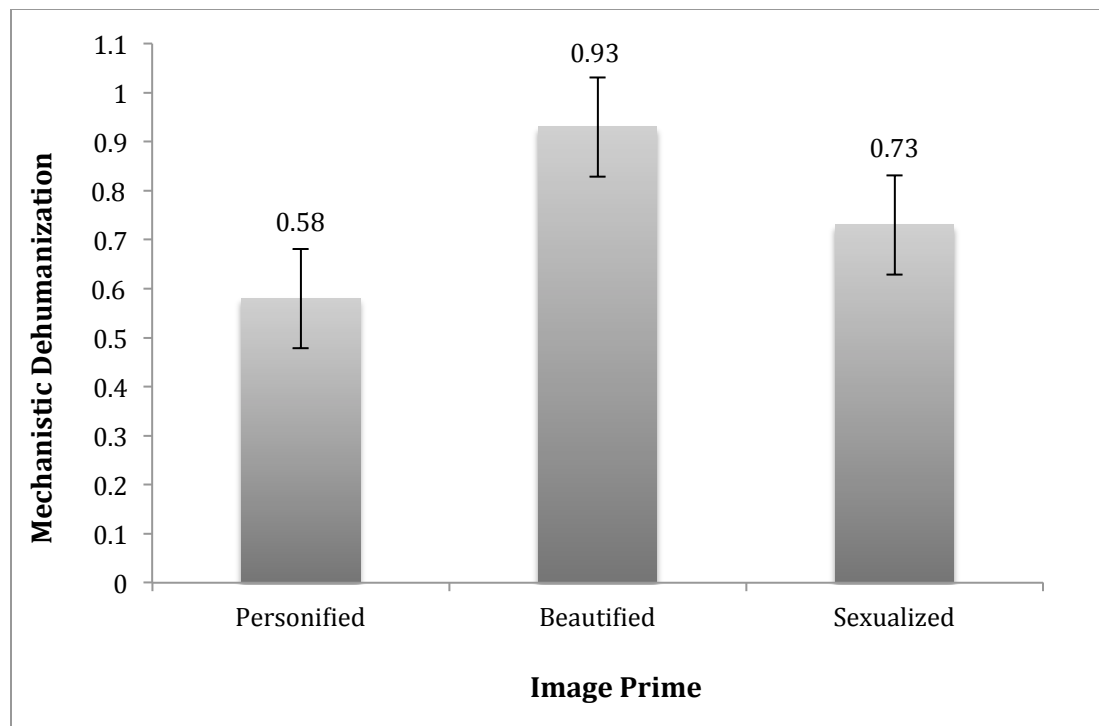


Figure 1. Mechanistic dehumanization (HN scale first) by image prime.

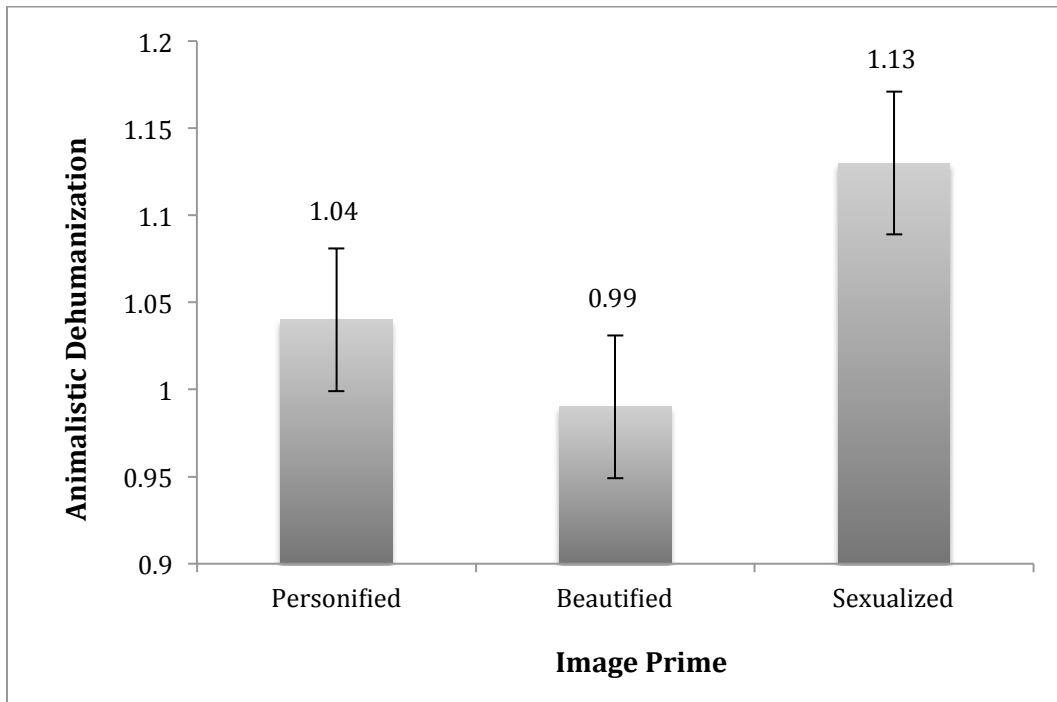


Figure 2. Animalistic dehumanization by image prime.



Table 5. Mean reaction time by image prime, gender, IAT type and order.

Image	Gender	IAT Type	Order	Mean (SD)
Personified	Male	Animal	Compatible First	-.375 (.268)
			Incompatible First	-.237 (.309)
		Object	Compatible First	-.302 (.271)
			Incompatible First	-.123 (.269)
	Female	Animal	Compatible First	-.107 (.239)***
			Incompatible First	-.318 (.364)
Object		Compatible First	-.346 (.306)	
		Incompatible First	-.350 (.176)	
Beautified	Male	Animal	Compatible First	-.416 (.320)*
			Incompatible First	-.244 (.206)
		Object	Compatible First	-.319 (.234)
			Incompatible First	-.396 (.289)
	Female	Animal	Compatible First	-.087 (.520)**
			Incompatible First	-.243 (.299)
Object		Compatible First	-.549 (.360)	
		Incompatible First	-.358 (.158)	
Sexualized	Male	Animal	Compatible First	-.156 (.165)*
			Incompatible First	-.259 (.209)
		Object	Compatible First	-.256 (.308)
			Incompatible First	-.238 (.338)
	Female	Animal	Compatible First	-.464 (.227)**/**
			Incompatible First	-.345 (.399)
Object		Compatible First	-.352 (.237)	
		Incompatible First	-.331 (.311)	

Note: Means with the same number of asterisks represent statistically significant differences for comparisons that were conducted to deconstruct interaction effects,  $p < .05$