

## Obese people=Animals? Investigating the implicit “animalization” of obese people

Philippe Bernard<sup>1,2</sup>, Mangez Nathalie<sup>1</sup>, Olivier Klein<sup>1</sup>

<sup>1</sup> Research Center for Social and Cultural Psychology, Université Libre de Bruxelles, Brussels, Belgium

<sup>2</sup> Belgian Fund for Scientific Research (F.S.R.-NFSR)

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*Integrating a dehumanization perspective with the literature on stereotyping of obesity, this paper investigated whether obese people are implicitly categorized as animals rather than humans. Sixty participants were asked to complete an Implicit Association Test in which they had to associate images of thin and obese faces with animal or human characteristics. As predicted, people were more likely to categorize images of obese faces as animal-like and this tendency was more acute amongst thinner participants. Implications of our results for future on research on dehumanization and negative stereotyping of obesity are discussed.*

Keywords: obesity, animalization, dehumanization, obesity stereotyping, implicit association test

Address of correspondence: Philippe Bernard, Université Libre de Bruxelles, Campus du Solbosch CP 122, Avenue F. Roosevelt, 50, 1050 Brussels, Belgium. Email: pbernard@ulb.ac.be

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### Investigating the implicit animalization of obese people

Understanding what drives attitudes and behaviors to obese people is an important question given that overweight individuals are often the target of various forms of prejudice and discrimination, such as employment discrimination (Andreyeva, Puhl, & Brownell, 2008), mistreatment in health care (Magliocca, Jaber, Alto, & Magliocca, 2005), education and career achievement (Morris, 2007), negative portrayals of obesity in the media (Latner, Rosewall, & Simmonds, 2007) and experience lower quality interpersonal relationships (Sheets & Ajmere, 2005) (for a review, see Puhl & Brownell, 2001; Puhl & Heuer, 2009). In this paper, we posit that the social perception of obesity is based on dehumanization. Specifically, drawing on literature on dehumanization and obesity stereotyping, we hypothesized that obese individuals were implicitly associated with animals.

Descriptions likening obese people to animals are found in many languages. Although animal metaphors referring to people can be gentle (e.g. mouse), those utilized to describe obese people are usually not. Animal metaphors typically applied to obese people are strikingly offensive (e.g. pig, cow, hippopotamus, whale), as they

allude to the superiority of humans in relation to animals (Goatly, 2006). Such representations reflect dominant group ideologies (e.g. Hodson & Costello, 2007; see also Viki & Calitri, 2008) and the need to maintain a specific moral social order (Brandes, 1984). Importantly, offensive animal metaphors in common language may indicate that the targeted group is dehumanized (Haslam, 2006; Haslam, Loughnan, & Sun, 2011). This view, which draws on inhumanization theory (Leyens et al., 2001), has produced a vast body of experimental research reporting that many outgroups are subtly denied attributes that differentiate humans from animals (e.g. Leyens et al., 2001; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007) and may be explicitly (Viki et al., 2006) or implicitly associated with animals (e.g. Saminaden, Loughnan, & Haslam, 2010; for a review, see Vaes, Leyens, Paladino, Miranda, 2012). Importantly, likening a group to animals is associated with stigmatizing attitudes and behaviors to the dehumanized target (Castano & Giner-Sorolla, 2006; Haslam, 2006), especially when perceivers do not identify with the evaluated group (Cehajic, Brown, & Gonzalez, 2009; Vaes, Paladino, & Puvia, 2011).

The vast literature on obesity stereotyping supports our hypothesis that obese people are likely to be targets of

animalizing dehumanization. One of the chief characteristics associated with obese people is incapacity to control one's impulses (cf. Crandall, 1994). Traits such as "lazy", "undisciplined", "sloppy" gluttonous, which are part of the explicit (Hebl & Kleck, 2002; Puhl & Brownell, 2003; Roehling, 1999) and implicit (Schwartz, Vartanian, Nosek, & Brownell, 2006; Chambliss, Finley, & Blair, 2004) stereotypes of obese people, reflect this dimension (but see Holland & Haslam, 2013). The capacity to control one's displays of emotion and the exercise self-control are characteristics that have been specifically associated with humans rather than animals (e.g. Haslam, 2006; Loughnan & Haslam, 2007; Loughnan, Haslam, & Kashima, 2009). Similarly, Leyens et al. (2001) suggested that humans differ from animals in their capacity to experience emotions that involve a degree of "self-control" as opposed to "primary" emotions that are more dependent on direct physical experience (see Demoulin, Saroglou, & Van Pachterbeke, 2008). In addition, recent research showed that obese individuals are seen as lacking both warmth and competence in the Stereotype Content Model (Hebl, Ruggs, Singletary, & Beal, 2008) and research has found clear evidence that groups that rated low in both competence and warmth are likely to be seen as lacking in uniquely human traits (Vaes & Paladino, 2010, see also Harris & Fiske, 2006, 2007). Nonetheless, to the best of our knowledge, no empirical studies have investigated whether obese individuals are implicitly associated with animals.

This study tested this hypothesis directly. Using an Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), we tested the prediction that obese (vs. thin) individuals were likely to be associated with animals (Hypothesis 1). Drawing on a dehumanization perspective that posits that animalizing dehumanization is an intergroup phenomenon (Leyens et al., 2001; Haslam, 2006) and on recent research that highlighting that outgroup stereotypes are less human than ingroup stereotypes (Vaes & Paladino, 2010), we predicted that thinner participants would display more animalization of obese people (Hypothesis 2). Finally, we also explored the construct validity of our IAT by examining whether animalization of obese people was correlated with anti-fat attitudes (see Crandall, 1994).

## Method

### Participants and procedure

A total of sixty participants (45 women; 13 men, the gender of the two remaining participants was not recorded,  $M_{\text{age}} = 23.83$  years;  $SD = 4.10$ ) volunteered for the present experiment, which was conducted in a Belgian French-speaking University, the Free University of Brussels [*Université Libre de Bruxelles*]. Thirty participants were students and the others were employed. Due to a computer problem, the responses of two participants to the questionnaire following the IAT were not recorded so data from only fifty-eight participants were used in the correlation analysis. Participants were first asked to complete an Implicit Association Test measuring animalization of obese individuals, then they completed a questionnaire including the Anti-Fat Attitudes questionnaire (AFA; Crandall, 1994) and socio-demographic questions.

### Implicit Association Test

Participants were asked to complete an IAT (Greenwald et al., 1998). Based on previous research assessing implicit animalization (see Vaes et al., 2011), we constructed an IAT that measures reaction times to associate obese and thin faces with animal and human concepts. The animal IAT evaluated the strength of association between each member of a pair of concepts (obese and thin faces) and a pair of attributes (animal and human characteristics). We used Greenwald, Nosek and Banaji's (2003) improved algorithm for calculating D-scores. Negative D scores represented stronger associations between obese and animal concepts and positive D scores represented stronger associations between obese and human concepts.

### Animal and human words.

Two groups of words, describing either animal or human concepts, were chosen based on a pre-test. Twenty participants (10 men;  $M_{\text{age}} = 27.15$  years;  $SD = 8.12$ ) were asked to rate the extent to which these words were typical of animals rather than humans (nine-point scale, ranging from 1 = *Animals* to 9 = *Humans*), as well as the valence of each item; these participants did not participate in the present study. Five items were chosen for each category. A 2 (word category: animal, human)  $\times$  2 (participant gender: male, female) ANOVA (with word category as a within factor) revealed a main effect of word category with animal words (e.g. nature [*nature*], instinct [*instinct*], breeding [*élevage*], paw [*patte*] and snout [ *museau*]) rated as typically animal, but not specific to human beings ( $M_{\text{animal}} = 2.72$ ;  $SD = .86$ ) and the second set of words (e.g. moral [*moral*], tradition [*tradition*], hair [*cheveux*], foot [ *pied*], mouth [*bouche*]) was rated as typical of human beings, but not animals,  $M_{\text{Human}} = 7.62$ ,  $SD = 0.82$ ,  $F(1, 18) = 314.17$ ,  $p < .001$ ,  $\eta_p^2 = .94$ . There was no main effect ( $p = .44$ ), or interaction of participant gender ( $p = .26$ ). Note that the words hair, foot and mouth are very specific to humans in French; the terms applied to animals are *poil*, *patte* and *gueule*, respectively.

Importantly, the ANOVA on item valence revealed that the two word groups did not differ significantly in terms of valence (seven-point scale labeled -3: extremely negative to +3: extremely positive) ( $F(1, 18) = 1.08$ ,  $p = .31$ ), and their valences were both slightly positive ( $M_{\text{Animal}} = .105$ ;  $SD = .61$ ;  $M_{\text{Human}} = .94$ ;  $SD = .51$ ). Finally, a main effect of participant gender emerged ( $F(1, 18) = 11.50$ ,  $p < .01$ ,  $\eta_p^2 = .39$ ) with more positive ratings amongst female participants, but the interaction between participant gender and stimulus valence was not significant ( $p = .51$ ).

### Pictures of obese vs. thin targets.

After rating human and animal words, pre-test participants viewed the pictures of obese and thin people and were asked to indicate on a seven-point Likert scale (1: "Not thin at all"; 7: "Thin") whether they considered each target to be thin. In a departure from previous research that had relied images of different individuals to provide thin and obese targets in IAT (e.g. Schwartz et al., 2006), we aimed to use images that differed in only terms of weight in order to capture fully the impact of weight.

Firstly, we took a snapshot of fourteen volunteers (8 men, 6 women; aged from 20 to 30 years) who had

previously provided written consent to a document explaining how we planned to use their photographs in the present experiment. The picture background was white; all volunteers wore a white t-shirt and assumed a neutral facial expression. These pictures were processed by an application that enlarges people's faces (Fatbooth®) to give fourteen images of thin faces and fourteen images of the same volunteers with an obese face. Five pairs of faces (3 male pairs) were selected; all pairs contained two different images (obese or thin) of the same face. As expected, an ANOVA revealed that the images of thin faces were rated as thinner ( $M = 4.51$ ;  $SD = 1.20$ ) than the image-processed "fat" ones ( $M = 1.29$ ;  $SD = .43$ ,  $F(1, 18) = 106.76$ ,  $p < .001$ ,  $\eta_p^2 = .85$ ).

*Anti-fat attitudes*

We utilized the Anti-fat Attitudes questionnaire (Crandall, 1994) to evaluate prejudice toward obese individuals on a Likert scale with anchors 1: *very strongly agree*; 9: *very strongly disagree* ( $\alpha_{AFA} = .83$ ). This questionnaire comprises three subscales: the *Dislike* subscale assesses respondents' antipathy to fat people (sample item: *I don't like fat people much*); the *Fear of Fat* evaluates respondents' concerns about weight and beliefs about the controllability of weight and fat (sample item: *I worry about becoming fat*), and the *Willpower* subscale assesses beliefs about the controllability of weight (sample item: *Fat people tend to be fat pretty much through their own fault*). In the present sample, we found that all subscales showed good reliability ( $\alpha_{Dislike} = .88$ ,  $\alpha_{Fear of Fat} =$

$.86$  and  $\alpha_{Willpower} = .80$ ). We used a French-language adaptation of the questionnaire produced using back translation. Using a varimax rotation, factor analysis revealed the expected three factors corresponding to the Dislike, Fear of Fat and Willpower subscales (eigenvalues = 4.79; 2.38; 1.88, respectively).

*Weight and socio-demographic questions*

At the end of the questionnaire, participants were asked to indicate their age and gender, and were asked to report their height and weight in order to calculate their Body Mass Index (BMI).

**Results**

Table 1 displays the means and standard deviations for all measures as well as simple correlations. Note that negative D scores represent stronger associations between obese and animal concepts. The simple correlation between BMI and animalization was positive (suggesting that the higher a participant's BMI was, the less he or she associated obese people with animal concepts), but did not reach significance,  $r(58) = .20$ ,  $p = .12$ . IAT score was not correlated significantly with overall anti-fat attitudes. Nevertheless, we found a marginally significant correlation between animalization and the AFA willpower subscale,  $r(58) = -.22$ ,  $p = .10$  indicating that implicit animalization of obese people is associated with lower attributions of willpower to obese individuals.

Table 1. Univariate statistics and simple correlations

<i>M</i>	<i>SD</i>		IAT	BMI	AFA	DIS	FF	WP
-.42	.45	IAT	1	.20	-.10	-.05	.01	-.22†
20.92	2.78	BMI	-	1	-.19	-.19	-.15	.00
4.52	1.31	AFA	-	-	1	.85**	.60**	.58**
3.57	1.62	DIS	-	-	-	1	.21	.32*
5.56	2.36	FF	-	-	-	-	1	.14
5.72	1.79	WP	-	-	-	-	-	1

Note. IAT = IAT' D score; BMI = Body Mass Index; AFA = Anti-Fat Attitudes; DIS = Dislike subscale; FF = Fear of Fat subscale; WP = Willpower subscale. \*\*  $p < .01$ ; \*  $p < .05$ ; †  $p < .10$

*Implicit animalization*

Consistent with our hypothesis, we found a negative D score ( $M = -.42$ ;  $SD = .45$ ) that was significantly different from zero,  $t(59) = -7.25$ ,  $p < .001$ , indicating that obese people were more likely to be associated with animals than with humans.

Table 2. Regression analysis

	Step	$\beta$	<i>t</i>	<i>p</i>
Model (IAT D score)				
Participant Gender	1	.31	1.81	.07
BMI	1	.41	2.40	.02
Participant Gender × BMI	2	.24	1.48	.14

Table 2 displays results of a regression analysis for IAT D scores (Aiken & West, 1991) that assessed whether participant gender (coded as -1 = Men; 1 = Women) or participant BMI (centered) moderated the animalization of obese people. There was a significant main effect of participant BMI and a marginally significant effect of participant gender, indicating more animalization of obese people (i.e., negative D score) amongst thinner participants. In addition, female participants displayed

marginally more positive implicit associations to obese people than male participants. In the second step, we added the product terms corresponding to the two-way interaction; the result did not reach statistical significance.

**Discussion**

Integrating dehumanization theory (Haslam, 2006; Leyens et al., 2001) with research on obesity stereotyping (Phul & Heuer, 2009), this paper is the first to provide evidence that obese people are implicitly associated with animals rather than humans. Importantly, this effect cannot be reduced to a mere preference for thin people as the animal and human words we used differed only on the uniquely human dimension, not in terms of valence.

As predicted, our regression analysis showed that implicit animalization of obese people increases when participant weight decreases. This suggests that perceived intergroup weight difference is of the basis of animalization of obese individuals. From a dehumanization perspective (Leyens et al., 2001; Haslam, 2006), one would argue that this moderating effect occurred because a higher weight discrepancy between perceiver and target

contributes to the designation of obese people as outgroup members.

We also found a marginally significant negative correlation between animalization of obese people and attributions of willpower. Although future research should replicate our findings in larger samples, this correlation may be considered as an indication of the construct validity of our animal IAT since willpower items captured perceived lack of self-restraint, which is a core trait differentiating animals from humans (Haslam, 2006). This result also suggests that animalization is associated with a view of obesity as a stigma that is both visible and related to a lack of self-control (Crocker, Major, & Steele, 1998; Tiggeman & Ansbury, 2000). In contrast, the lack of correlation between animalization and the Dislike and Fear of Fat subscales suggest that animalization is not due to perceivers' concerns about their own weight. In the light of this finding, future research should also examine whether animalization can be distinguished from a simple negative evaluation of obese people by exploring whether animalization of obese people is correlated with a particular direction on "bad-good" and "lazy-motivated" IAT dimensions.

Although this study demonstrated that animalizing dehumanization is a core process in the perception of obesity, the work has several limitations. In addition to replicating these findings in other settings and with larger samples, future research should investigate separately the animalization of female and male targets, and examine whether animalization of obese people is moderated by target age as previous research has shown that weight bias is more acute when targets are female (Tang-Péronard & Heitman, 2008) or younger (Hebl et al., 2008). Another interesting line of research is the issue of whether animalization of obese people is associated with perceivers' endorsement of socially dominant ideologies (Niederdeppe, Shapiro, & Porticella, 2011). Drawing on theories of dehumanization and obesity stereotyping, one might predict that animalization of obese people would be higher amongst individuals who strongly endorse conservative views of obesity. Finally, previous research did not systematically find a correlation between implicit and explicit anti-fat attitudes and anti-fat discrimination (O'Brien et al., 2008; but see Bessenoff, & Sherman, 2000). Future research should examine whether implicit animalization of obese individuals predicts avoidance behaviors and discrimination against obese individuals better than characterization of obese individuals on "bad-good" and "lazy-motivated" dimensions; this would test the discriminant validity of our novel IAT measuring the animalization of obese individuals.

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