

Stigmatized Sources and Stigmatized Content:
Liberals and Conservatives React Differently to Fat Authors
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Abstract

Many people, including members of stigmatized groups, have found themselves in the position of trying to persuade others that group-based biases are serious problems. Past studies have manipulated characteristics of the sources of such persuasive messages, finding, for example, that messages from racial minority groups can elicit positive reactions from liberals and negative reactions from conservatives (Ramsey & Gonzalez, 2011). However, little is known about the extent to which reactions to persuasive messages from members of stigmatized groups differ based on whether the messages are about prejudices related to the group membership itself. In this study, online participants were exposed to an editorial-style persuasive appeal in a 2 (author image: “fat” versus “thin”) x 3 (topic: arguing against weight prejudice, racism, or environmental destruction) factorial design. Liberals evaluated the fat author more favorably than conservatives did across topic conditions, but liberals also perceived the fat author writing about weight prejudice as particularly biased. Liberals may define bias differently from conservatives, such that they perceive more of it when members of targeted groups discuss group-based prejudice, but this process seems not to interfere with their greater overall receptivity to communications from members of such groups.

Stigmatized Sources and Stigmatized Content:

Liberals and Conservatives React Differently to Fat Authors

Many people, including members of stigmatized groups, have found themselves in the position of trying to persuade others that group-based biases are serious problems. Some evidence suggests that pre-existing social attitudes can affect an audience's reception of prejudice-related messages from stigmatized sources (Ramsey & Gonzalez, 2011), but information about the nature of these effects is limited. In particular, little is known about whether reactions to persuasive messages from members of stigmatized groups differ when the messages are about prejudices related to the group membership itself. It might be reasonable to expect that audiences have group-based biases which affect their reactions to authors regardless of the topic, and also that people's perceptions of communications about prejudice might depend on whether they think the author is personally affected by the type of prejudice in question. To my knowledge, no studies have simultaneously manipulated the group identity of the source of a message and the presence of prejudice-related content in that message.

Persuasion and Source Group Membership

Persuasion about general topics. People agree more, and expect to agree more, with others who are personally similar to themselves (Feldman, 1984; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). In particular, audiences are sometimes more receptive to arguments from social ingroups, especially when persuaders lack definitive expert credentials (Oldmeadow, Platow, Foddy, & Anderson, 2003) and when they adopt non-majority positions (Clark & Maass, 1988). These general results about group status surely explain some of the behavior of majority-group members responding to persuasive appeals from targeted social groups, but they tell an incomplete story.

A number of studies have tried to determine whether people respond better to persuaders of the same race as themselves compared to race-mismatched persuaders. Many found that race matching increased persuasiveness (Block, 1972; Cohen & Peterson, 1981; Noel & Allen, 1976; Qualls & Moore, 1990; Whittler, 1989; Whittler & DiMeo, 1991), but some found mixed or no effects (Blass, Alperstein, & Block, 1974; Bush, Hair, & Solomon, 1979; Freedman, 1967; Solomon, Bush, & Hair, 1976). At least one study found that both White and Black participants rated Black salespeople as more credible than White salespeople (Jones, Moore, Stanaland, & Wyatt, 1998). Most of the studies on this question, however, have been focused on persuasion about the desirability of products, not social issues like prejudice, so even if the conclusions were more straightforward, it would not be certain that they would extend to other domains of persuasion. A more recent study outside of the marketing domain found that people responded less favorably to persuasive messages from a racial minority group than to messages from the majority group, as long as they perceived those messages as personally threatening (Livingston & Sinclair, 2008). The content of the messages in the Livingston and Sinclair study was not focused on prejudice, but the results might be applicable because implying that people are prejudiced can be threatening (Winslow, 2004).

One important tool for parsing the complex processes of persuasion in light of mixed results is the Elaboration Likelihood Model (Petty & Cacioppo, 1986). The model emphasizes the importance of elaboration, or the degree to which an audience processes the content of a message. In the context of stigmatized sources, studies examining elaboration have found that low-prejudice Whites are particularly likely to scrutinize the content of messages from members of racial minority groups, possibly to guard against unfair reactions (Petty, Fleming, & White, 1999; White & Harkins, 1994). White and Harkins (1994) also found that a White persuader was

more persuasive than a Black persuader overall, which can be viewed as a straightforward prejudicial effect.

Persuasion about intergroup bias. Relatively few studies have examined how stigmatized source identities affect responses to messages *about stigma itself*. One theoretical phenomenon which might be pertinent is perceived self interest. Sources who promote ideas which go against their own personal gain are perceived as more trustworthy, at least partially because they are thought to be motivated by honesty rather than self-interest (Eagly & Chaiken, 1975; Eagly, Chaiken, & Wood, 1981; Eagly, Wood, & Chaiken, 1978; Priester & Petty, 1995). However, unexpected arguments can also lead to enhanced scrutiny, which may not translate into positive reactions if the arguments are perceived as poor (Maheswaran & Chaiken, 1991). Also, the positive response to violations of perceived self-interest disappears when the violations apply to group-based interests rather than individual personal interests, because authors who seem to advocate against the interests of their social groups may be perceived as disloyal (Petty, Fleming, Priester, & Feinstein, 2001). The latter result suggests that dominant-group authors may *not* receive a trustworthiness bonus when advocating against intergroup prejudice. However, stigmatized authors may still receive a trustworthiness penalty on such topics if they are perceived as biased.

Ramsey and Gonzalez (2011) found that White liberal participants viewed a Black lawyer writing about racial prejudice as more persuasive than a White lawyer. In light of previous findings that source expertise is viewed as persuasive (see Pornpitakpan, 2004) and that Black individuals are more likely to adopt a “teacher” role in discussions about race (Tatum & Sekaquaptewa, 2009), Ramsey and Gonzalez concluded that their effect was likely driven by a perception of “personal expertise” on issues related to racism. It may also be the case that White

liberals were particularly concerned about controlling their own prejudicial reactions when responding to a Black author (see Petty et al., 1999). It might be tempting to conclude that the perception of “personal expertise” would extend to communications from other stigmatized groups, but past research has focused mostly on dimensions of prejudice which are relatively socially unacceptable, like race. Weight prejudice is less taboo than racial prejudice (Crandall, 1994; Crandall, Eshleman, & O’Brien, 2002), so liberals may not be inclined to respond to fat authors writing about weight prejudice as “personal experts,” as they do with Black authors writing about racial prejudice. Instead, perhaps fat authors will elicit negative evaluations if they are perceived as personally biased.

Ramsey and Gonzalez (2011) also found that Black participants evaluated a Black author more favorably than a White author when the topic was racial prejudice, suggesting that ingroup bias effects can extend to the context of persuasion about prejudice.

Weight-Based Prejudice

To my knowledge, no studies have attempted to isolate the effect of source body size on responses to a persuasive appeal of any sort. It is important to understand which observations about stigmatized sources generalize across dimensions of group bias and which ones pertain to particular stigmatized groups. For this reason alone, weight bias is worth studying in the context of persuasion. Also, weight prejudice receives less political attention than racial prejudice, which may help to separate the process of persuasion from the effects of pre-existing political opinions. Finally, weight prejudice is influenced by the view that body size is primarily determined by personal choices—a view which can be addressed directly by persuasive messages (Crandall, 1994).

Weight prejudice is an important problem. There is already a substantial body of evidence that weight-based prejudice pervades modern Western cultures and seriously harms fat¹ people. Fat people experience mistreatment in many domains, including employment, health care, education, and interpersonal relationships, with strong consequences for mental and physical health (Puhl & Brownell, 2001; Puhl & Heuer, 2009; Wooley, Wooley, & Dyrenforth, 1979). Of particular relevance to the process of persuasion, fat people are often viewed as less physically attractive than thin people (Cornelissen, Hancock, Kiviniemi, George, & Tovée, 2009; Furnham, Dias, & McClelland, 1998; Harris, Harris, & Bochner, 1982; Puhl & Heuer, 2009; Singh & Young, 1995; Wooley et al., 1979).

Potentially relevant demographic correlations. Pre-existing attitudes regarding body size might influence responses to authors of varying sizes, so it is worth considering demographic variables which might be related to weight-based prejudice, even if they do not directly pertain to the theoretical questions of the study. Very robust effects have been found for gender, in which men typically exhibit stronger anti-fat prejudice than women do (Crandall, 1994; Hebl, Ruggs, Singletary, & Beal, 2008; Lewis, Cash, Jacobi, & Bubb-Lewis, 1997; Perez-Lopez, Lewis, & Cash, 2001). Women, however, exhibit more personal fears about their own body size (Crandall, 1994), perhaps because the negative consequences of weight prejudice are often stronger for women (Puhl & Heuer, 2009; Wooley et al., 1979).

There is some evidence that White people express more weight prejudice than Black people do, at least among women under normal conditions (Hebl & Heatherton, 1998; Hebl, King, & Perkins, 2009), although more information is needed on race effects. It seems unclear whether age has an important effect on anti-fat attitudes in the United States. There was a positive correlation between age and weight bias in a German sample (Hilbert, Rief, & Braehler,

2008), but at least one American study reported no correlation (Hebl et al., 2008). The German sample also showed a negative correlation between formal education and weight bias, but the generalizability of this finding may be similarly limited (Hilbert et al., 2008).

Participant body size and political identification are of particular interest in the context of responses to persuasive messages about weight prejudice. There are mixed results pertaining to the relationship between anti-fat attitudes and measures of respondent body size. The bulk of the available evidence suggests that there is no correlation between anti-fat attitudes and Body Mass Index (BMI; Crandall, 1994; Hebl et al., 2008; Hilbert et al., 2008; Perez-Lopez et al., 2001). Allison, Basile, and Yucker (1991) used a subjective self-evaluation of body size, and also found no correlation with anti-fat attitudes. However, studies employing implicit rather than explicit measures of prejudicial attitudes have found negative correlations with BMI (Degner & Wentura, 2009; Schwartz, Vartanian, Nosek, & Brownell, 2006). Also, Schwartz and colleagues (2006) found a negative correlation between BMI and an *explicit* measure of prejudice, which they argued was uniquely observable in their sample because of its large size and particularly wide range of BMIs.

Finally, people who identify themselves as politically conservative tend to display more anti-fat attitudes than people who identify themselves as politically liberal (Crandall, 1994; Crandall & Biernat, 1990). The present study will measure all of these demographic variables, in part to account for the possibility of interactions, but also to contribute more information to areas for which correlations are uncertain.

Attribution of responsibility. Weight prejudice is strongly tied to the false belief that people are primarily responsible for their own body size through eating or exercise choices. Weight prejudice correlates with such attributions of responsibility (Allison et al., 1991;

Crandall, 1994; Hilbert et al., 2008), and this connection is particularly strong in individualistic cultures which value thinness (Crandall, D'Anello, Sakalli, Lazarus, Nejtardt, & Feather, 2001).

The relationship between weight-based prejudice and the belief that body weight can be easily controlled is not merely correlational. Several studies have shown that providing clear information about why body fat is heritable and difficult to control can result in weaker expressions of anti-fat attitudes (Crandall, 1994; Lewis et al., 1997). These results illustrate that explicitly expressed weight prejudice can be tempered by persuasive appeals, and they suggest that a similar effect should emerge in the present study.

Anti-Fat Attitudes Scale. Crandall (1994) developed the Anti-Fat Attitudes Scale (AFAS). The three subscales, Dislike, Fear of Fat, and Willpower, measure weight-based prejudice, personal fears related to being or becoming fat, and attributions of responsibility, respectively. The AFAS has been validated in many contexts (see Crandall et al., 2001). The full scale will be administered in the present study, although the Dislike subscale most closely measures weight-based prejudice.

Weight Prejudice May Affect Persuasion

Most of the existing evidence showing that the group identity of the source can affect reactions to a persuasive message is based on race, not weight or apparent weight. However, some of the same reasons why people respond differently to messages from majority and minority racial groups might also apply to messages from thin and fat people. One goal of the present study is to determine whether responses to messages actually differ by the apparent weight of the author, and whether those differences match past findings about race.

A mechanism which might uniquely drive reactions to messages from fat and thin authors is relative attractiveness. On average, people view fat people as less attractive than thin people

(see above). The attractiveness of a persuader tends to be correlated with agreement and positive ratings of the message (Horai, Naccari, & Fatoullah, 1974; Messner, Reinhard, & Sporer, 2008; Reinhard, Messner, & Sporer, 2006; Tsalikis, Ortiz-Buonafina, & Latour, 1992).

Attractiveness also implicates perceptions of self-interest. While people respond more positively to messages from attractive persuaders in general, unattractive persuaders can be just as effective as attractive persuaders if the communication is not perceived as self-interested (Reinhard et al., 2006). However, unattractive persuaders are more likely to be viewed as self-interested in ambiguous situations, and this self-interest differential mediates the effect of attractiveness on attitude change (Messner et al., 2008). Both of these studies focused on product-related persuasion, but if their results generalize outside of marketing, then participants should respond negatively to a fat author writing about weight prejudice. In particular, differences in author attractiveness provide another reason to expect the fat author to be seen as more personally biased, especially when writing about a topic which might seem to justify such a perception, such as weight prejudice.

The Present Study

The objective of the present study is to examine the effects of an author's stigmatized identity across topics. The appearance of the author and the content of the message will be manipulated separately. Two author image conditions will be generated by modifying a single image of a man to make him appear fatter or thinner. Three topic conditions will be constructed by modifying a single rhetorically powerful editorial such that it protests against weight prejudice, racial prejudice, or an unrelated social issue. Three topics were chosen rather than merely two in order to separate effects due to writing about stigma in general from effects due to writing about the stigma directed at one's own group. After the manipulation, participants will be

asked to evaluate the article on dimensions like persuasiveness and bias, to respond to the Anti-Fat Attitudes Scale, and to express their own opinions on the issues in question.

Hypotheses

Few studies have examined weight prejudice in the context of persuasion. I have encountered no published work simultaneously manipulating stigmatized author characteristics and the content of the message; I have also encountered no published work manipulating the apparent body size of the author at all. The lack of available information justifies a broad analytical approach, with the aim of uncovering patterns which will be testable in future, more targeted studies. Some specific predictions emerge from existing information.

Hypothesis 1: Prejudice reduction. Past work suggests that expressions of weight prejudice can be reduced by exposure to information about body weight being outside of one's control (e.g., Crandall, 1994). Since the weight prejudice article will contain such information, I expect AFAS Dislike scores to be lower in the weight article condition than in the other article conditions. This is the only hypothesis which would merely replicate a past finding.

Hypothesis 2: Attractiveness process evidence. Past work suggests that body size is negatively correlated with perceived attractiveness (e.g., Puhl & Heuer, 2009), and that unattractive persuaders are less effective than attractive persuaders under normal circumstances (e.g., Messner et al., 2008).

Hypothesis 2a. The thin author will be rated as more attractive than the fat author in general.

Hypothesis 2b. People who score higher on AFAS Dislike will be more likely to find the thin author more attractive than the fat author.

Hypothesis 2c. Evaluations of the persuasive appeal will be more favorable among those who rate the author they saw as relatively attractive.

Hypothesis 3: On average, people will favor the thin author. Based on the widespread prevalence of weight prejudice, in general and in the form of biased attractiveness ratings, I predict that the thin author's message will be rated more favorably, on average, than the fat author's message.

It is possible that participants will scrutinize the message from the fat author more closely than the message from the thin author if they have a desire to appear unprejudiced. Additional scrutiny could interfere with the direct effect of author size if the arguments in the article are perceived as strong (Petty et al., 1999; White & Harkins, 1994). However, since weight prejudice is more socially acceptable than the forms of racial prejudice relevant to past studies, there should be much less desire to appear unprejudiced in the present study (Crandall et al., 2002).

Hypothesis 4: AFAS Dislike will predict negative evaluations of the fat author. The Dislike subscale is a measure of attitudes toward fat people relative to thin people. Therefore, I predict that this subscale will correlate negatively with favorable evaluations of the fat author, but not the thin author.

Hypothesis 5: Thin people will favor the thin author. Past work has found that people prefer authors similar to themselves, including along racial lines (see Ramsey & Gonzalez, 2011). If this form of ingroup bias holds for weight as well as for race, then thin participants should express stronger preference for the thin author over the fat author. However, a number of studies suggest that people of all body sizes exhibit similarly strong weight prejudice under certain conditions (e.g., Crandall, 1994), so there is some reason to believe that body size might *not* have a strong relationship with article evaluations.

Hypothesis 6: Liberals will favor the fat author. Ramsey and Gonzalez (2011) found that liberal participants evaluated a credible Black author more favorably than a White author with the same credentials, while conservatives evaluated the White author more favorably than the Black author. If a similar finding emerges for weight, then liberals should evaluate the fat author more favorably than the thin author, and conservatives should evaluate the thin author more favorably than the fat author.

However, there are at least two reasons not to expect this result to extend to the current study. According to Ramsey and Gonzalez, liberals' preference for the stigmatized author should depend on a perception of "personal expertise." Weight prejudice is more socially acceptable than racial prejudice (Crandall et al., 2002), so participants may be more resistant to the views of the article and less likely to think about or care about "personal expertise." Also, racial prejudice is a traditional liberal political issue, but weight prejudice is not, so political identification may be less important in the current study than it was for Ramsey and Gonzalez.

Hypothesis 7: Interaction between author and topic. It is possible that some participants will perceive the fat author writing about the weight prejudice topic as motivated primarily by the desire to deflect negative attention from himself. The personal relevance of the topic could be construed by such participants as a source of personal bias, especially because fat people are often perceived as less attractive than thin people (see Puhl & Heuer, 2009) and unattractive persuaders are particularly distrusted when their messages can be viewed as motivated by self-interest (Messner et al., 2008; Reinhard et al., 2006). This process could lead participants to distrust the fat author writing about weight prejudice, relative to the other author-topic combinations. In particular, two separate predictions arise.

Hypothesis 7a. The fat author writing about weight prejudice will be perceived as *more biased* than other author-topic combinations.

Hypothesis 7b. The fat author writing about weight prejudice will be perceived *less favorably* than other author-topic combinations.

An important qualifier to this prediction arises from the literature on perceived violations of group interest. Such violations are surprising to audiences, but they do not typically boost positive ratings, perhaps because such violations are viewed as disloyal (Petty et al., 2001). This result suggests that the thin author might not actually be perceived more favorably in the weight topic condition. Therefore, even if the fat author is perceived as more *biased* in the weight topic condition, he might not necessarily be perceived less *favorably* than the thin author.

Broadly, this study seeks to test how people react to fat persuaders writing about weight prejudice, as opposed to other topics. In particular, I expect people to favor the thin author over the fat author, especially when they themselves are thin and conservative, and especially when the author can be construed as biased on the weight prejudice topic.

Method

Adult participants ($N \approx 584$; see “Dropout Analysis” in the Results section) were recruited via online classified advertisements. The web-based survey instrument collected no identifying information, and there was no compensation offered for participation.

Procedure

Participants gave their informed consent to participate and verified that they were over eighteen years old before beginning the experiment. First, they answered some general questions about online news exposure. Next, one seventh of the participants were randomly chosen as a control group which would not be exposed to any persuasive message. The remaining

participants were informed that they would be asked to read an article and answer questions about it. This information preceded the random assignment to experimental conditions, in order to give uncommitted participants an opportunity to drop out without biasing the randomization. Those who continued after being told about the article were randomly assigned to view one of six editorial-style persuasive essays in a two (author: “fat” versus “thin”) by three (topic: arguing against weight prejudice, Middle Eastern prejudice, or environmental destruction) factorial design.

The two author images were generated by digitally modifying a single greyscale photograph of a White man’s face to appear slightly fatter or thinner. The three article texts were generated using similar sentences to talk about different subjects. The weight prejudice article argued that body size is not primarily determined by personal choices, and that it is unfair and harmful to deride people because of their size. The Middle Eastern prejudice article argued that culture is important to one’s identity, and it is unfair and harmful to deride people for having and expressing a Middle Eastern background. The environment article argued that sustainable practices are not too expensive to implement, and it is unfair and harmful for businesses to emphasize their few eco-friendly practices while ignoring basic principles like waste reduction. All three articles were 7 paragraphs long, with exactly 65 lines and between 440 and 445 words.

After reading the persuasive message, participants in the experimental conditions completed the article evaluation measure, followed by a memory check in which they identified concepts as having been present or not present in the article. Next, all participants (including the control group) were asked to agree or disagree with ideas pertaining to “several different topics,” which were drawn from all three articles, regardless of which one they saw. Participants were then asked to complete Crandall’s (1994) Anti-Fat Attitudes Scale.

The next section asked participants to consider the experimental design itself. They were told that two author images were available, and that they had been randomly assigned to view one or the other. Participants were then shown both images. Those in experimental conditions were asked to verify that they remembered which one they had seen before, and all participants were asked to rate the attractiveness of the two images on five point Likert scales. Next, participants were asked to predict the outcome of the experiment, in terms of which author would elicit a more favorable reaction, and to give reasons why they expected this to occur.

Finally, participants were asked for basic demographic information, including gender, race, height, weight, subjective ratings of their body size, and political identification (“more liberal” or “more conservative”).

Measures

Memory check. The memory check consisted of a list of nine ideas related to the topic of whichever article the participant saw. Five of the ideas were present in the article, and four were not. Participants were asked to check the ideas that they remembered being present in the article. Scores were computed by adding one point for each item correctly identified and one point for each item correctly excluded, for possible scores ranging from zero to nine.

Article evaluation measure. The article evaluation measure consisted of fourteen questions about the article and its author, some of which were adapted from Ramsey and Gonzalez (2011). Participants responded using seven point Likert scales. All of the items appear in Table 2, which reports the results of the principal component analysis described in the Results section. Sample items include “In general, how much do you agree or disagree with the opinion expressed in the article?” and “In your opinion, how biased is the author when it comes to this topic?”

Body size measures. Two types of participant body size measures are available. The first, Body Mass Index (BMI), is computed by dividing weight in kilograms by the square of height in meters. Participants were asked to specify their height and weight as well as the units of their measurements. Non-metric responses were then converted to metric units and BMIs were computed.

The other weight measures are more social in their specifications. Participants were asked to respond to two questions on nine point Likert scales: “How would you describe your body’s size?” and “How do you think others would describe your body’s size?” In the context of this study, the latter measure is particularly useful, because it most closely addresses the personal relevance and social context of weight-related stigma. I will primarily focus on this measure rather than BMI, which was developed as a healthcare heuristic.

Anti-Fat Attitudes Scale. The Anti-Fat Attitudes Scale (AFAS; Crandall, 1994) consists of thirteen items measured on nine point Likert scales. The first subscale, Dislike, contains seven items measuring the negative attitudes participants have toward fat people in general. The second subscale, Fear of Fat, contains three items measuring participants’ anxiety over their own possible weight gain. The third subscale, Willpower, contains three items measuring the extent to which participants believe that fat can be controlled through sheer exercise of will.

The small number of participants who skipped two or more of the scale items were excluded from AFAS-related calculations. Subscale scores were then computed by taking the mean of the available responses. I will primarily focus on the first subscale, Dislike, because it most directly measures prejudice against fat people (Crandall, 1994; Crandall et al., 2001).

Results

Number of Participants and Dropout Analysis

Of the 1166 individuals who clicked on the advertisement for the study, 240 dropped out prior to the random assignment, leaving 926 participants. Of those, 140 were assigned to the control condition and not exposed to any article, leaving 786 participants assigned to one of the experimental conditions. Of those, 105 dropped out during or shortly after seeing their article, leaving 681 participants. Dropout rates at this stage did not differ by condition, $\chi^2(5, N = 786) = 3.45, p = .63$. During the final portion of the experiment, an additional 97 participants dropped out, leaving 584 participants with valid response variables, distributed among the conditions as shown in Table 1. Dropout rates for the complete experiment after random assignment did not differ by condition, $\chi^2(5, N = 786) = 2.56, p = .77$.

Demographic Information

Among the 584 participants with valid response variables, 388 were women, 183 were men, and 13 did not specify their gender. Approximate ages were computed by subtracting the participants' reported birth years from either 2010 or 2011, depending on when they completed the study. The minimum age was 18 due to the study requirements; the median age was 33 ($M = 37.64, SD = 14.80$). The participants' open-ended racial and ethnic identifications were coded into six categories: White ($n = 464$), Asian ($n = 14$), Black ($n = 26$), Hispanic or Latin American ($n = 28$), other ($n = 8$), or more than one of these categories ($n = 22$). Twenty-two participants did not specify their racial or ethnic identification.

A small number of participants ($n = 10$) had never completed high school, 42 had a high school degree, 187 had completed some college, 57 had an Associate's degree, 127 had a Bachelor's degree, 49 had completed some graduate school, 108 had a graduate degree, and four did not specify their highest educational attainment.

Participants were asked which state or territory of the United States they lived in, and these responses were categorized by Census region—Midwest ($n = 143$), Northeast ($n = 116$), South ($n = 111$), or West ($n = 213$). One participant did not specify a state of residence.

Participants were also asked whether they felt they were “more liberal” ($n = 385$) or “more conservative” ($n = 178$) politically. Twenty-one participants did not answer this question.

Manipulation Check

The mean memory score for information from the articles was 6.82 out of a possible 9 points ($SD = 1.54$). Out of the 638 participants who completed the memory evaluation, 583 (91%) scored higher than 4.5, the score expected due to chance alone. Out of the 563 participants who later identified which author photograph they remembered seeing, 481 (85%) correctly identified the photograph they actually saw. The mean memory score among those who correctly remembered the author photograph ($M = 6.91$, $SD = 1.48$) did not differ from the mean score among those who did not correctly remember the author photograph ($M = 6.94$, $SD = 1.64$), $t(557) = .18$, $p = .86$. This suggests that the memory measures evaluated separate constructs. Because the proportion of participants who performed poorly on the memory evaluations was low, and because very few ($n = 7$) performed worse than chance on both tasks, no participants were excluded based on memory performance and these measures were not examined further.

Body Size Measures

Participants were asked to provide their height and weight, but 74 either failed to respond or failed to adequately specify units for their responses. Body Mass Indexes (BMIs) were computed for the remaining 510 participants ($Mdn = 25.10$ kg/m², $M = 27.30$, $SD = 10.56$). According to the Center for Disease Control category definitions, 11 participants were

“underweight” (below 18.5 kg/m²), 234 were “normal” (18.5 – 24.9 kg/m²), 140 were “overweight” (25.0 – 29.9 kg/m²), and 125 were “obese” (30.0 kg/m² and above).

Participants were also asked to rate their body size ($Mdn = 5$, $M = 5.58$, $SD = 2.09$) and other people’s perceptions of their body size ($Mdn = 5$, $M = 5.31$, $SD = 2.21$) on 9-point Likert-type scales. In contrast to the BMI information, only seven participants failed to respond to the rating scale question about their own perceptions, and only six failed to respond to the question about others’ perceptions. On average, participants indicated that they perceive themselves as larger than they believe others perceive them, $t(575) = 8.33$, $p < .0001$. However, the two measures of perceived body size were highly correlated, $r(574) = .93$, $p < .0001$. The measure of participants’ perceptions of their own body size was correlated with BMI, $r(506) = .54$, $p < .0001$. The measure of others’ perceptions was also correlated with BMI, $r(507) = .55$, $p < .0001$. Hereafter, I will refer to the rating of others’ perceptions as “perceived body size.” Because the two items are so similar, I will not discuss the self-rating item further in this report.

Anti-Fat Attitudes Scale

Principal component analysis of the Anti-Fat Attitudes Scale (AFAS) items confirmed the three factors reported in Crandall (1994)—Dislike (7 items, $\alpha = .82$), Fear of Fat (3 items, $\alpha = .79$), and Willpower (3 items, $\alpha = .72$).

Correlation between subscales. Consistent with past research (Crandall, 1994), Dislike and Willpower were strongly correlated, $r(728) = .39$, $p < .0001$. However, weaker correlations were also found between Dislike and Fear of Fat, $r(728) = .19$, $p < .0001$, and between Willpower and Fear of Fat, $r(728) = .22$, $p < .0001$. These two correlations are inconsistent with the results reported in Crandall’s (1994) original study. Perhaps they are a product of the experimental design, or perhaps they are visible in the current sample simply because of its large size.

Demographic correlations. Correlations between the AFAS subscales, particularly the Dislike subscale, and demographic variables were examined in light of past research. The results for gender, race/ethnicity, age, formal education, and region of the United States are reported in Appendix A. The results for body size and political identification are reported here because they are more theoretically important.

Body size measures. Past work has consistently shown that explicit prejudice against fat people is not correlated with BMI. To my knowledge, the correlation has not been extensively tested with a measure based on reported social perception like the perceived body size item. In the present sample, there was a negative correlation between perceived body size and Dislike, $r(701) = -.17, p < .0001$, and a weaker but still significant negative correlation between BMI and Dislike, $r(619) = -.09, p = .020$. These correlations imply that relatively fat people expressed less weight prejudice than thin people in the current sample, which contrasts with past findings (e.g., Crandall, 1994). There was also a negative correlation between perceived body size and Willpower, $r(701) = -.12, p = .002$, and a non-significant correlation in the same direction between BMI and Willpower, $r(619) = -.05, p = .19$. There was a positive correlation between perceived body size and Fear of Fat, $r(701) = .18, p < .0001$, and a non-significant correlation in the same direction between BMI and Fear of Fat, $r(619) = .08, p = .054$. Since BMI measures a quantity only indirectly related to socially perceived “fatness,” it makes sense that any attitudinal correlations would be dulled for BMI relative to social measures, which explains why the present study found a relationship where past studies found none.

Political identification. Past work has shown that conservatives score higher on the Dislike subscale than liberals do. However, in this sample, there was no difference in Dislike

scores between self-identified liberals ($M = 2.80$, $SD = 1.58$) and conservatives ($M = 2.74$, $SD = 1.61$), $t(685) = .45$, $p = .65$.

Article Evaluation Measure

The set of fourteen items evaluating the article and its author were analyzed together to develop subscales. Principal component analysis with a varimax rotation yielded three factors with eigenvalues greater than one. The results are displayed in Table 2. The first factor seems to represent an overall favorable response to the article. I have labeled it “Favorability” (9 items, $\alpha = .91$). The second factor seems to represent the extent to which participants believed the article was effective at changing opinions. I have labeled it “Opinion Change” (2 items, $\alpha = .65$). The third factor seems to represent the impression that the author had some ulterior motive or bias for expressing the opinion (3 items, $\alpha = .50$). The lowest-loaded item from the third factor asks, “In your opinion, how passionate is the author about this topic?” This item seems to address a slightly different theoretical idea than the other two items, which ask about bias and self-interest. Because bias and self-interest are more relevant to the hypotheses and load onto the factor more heavily, I excluded the “passionate” item, labeling the third factor “Bias” (2 items, $\alpha = .51$). The Cronbach’s alpha value for this two-item subscale is no lower than for the three-item version. The relatively low alpha values for the Opinion Change and Bias subscales are reasonable in light of the fact that they contain only two items each, and they match clear theoretical dimensions. Scores for each subscale were computed by averaging the values of their items.

Control Group Opinions on Article Topics

Participants in the control group did not read an article, but they were asked to rate their agreement with ideas drawn from all three articles. Mean ratings of the ideas from each article were computed and compared using paired t tests. Control group participants agreed most

strongly with the ideas from the article critiquing environmental destruction ($M = 5.00$, $SD = .76$), followed by the article critiquing prejudice against Middle Easterners ($M = 4.73$, $SD = .86$), and they agreed least strongly with the article critiquing weight prejudice ($M = 4.52$, $SD = .79$). All three pairwise differences among these agreement scores were significant—for each of the three, $t(138) > 2.9$, $p < .004$. These ratings are useful because they provide a baseline measure of attitudes on these three topics, possibly helping to explain any observed differences between topic conditions.

Opinion Differences by Article Conditions

For each participant who saw an article, the mean agreement with the items matching ideas from their assigned article was computed, and the mean agreement with all the other items (matching ideas from either of the other two articles) was computed separately. A single paired t test for these sets of mean ratings was carried out, and participants did not agree significantly more with the ideas from the article they saw than with the ideas from the articles they did not see, $t(607) = .80$, $p = .42$. A 95% confidence interval of the mean of the differences ($-.04$ through $.09$ scale points) suggests that any actual short-term difference in opinions due to the manipulation was negligible.

Agreement ratings were also computed for the ideas from all three articles separately. Note that all participants were asked to respond to these specific content items, separately from their more general reactions to whichever article they read. Agreement with the ideas from the environment article did not differ between the group of participants who read the environment article ($M = 4.82$, $SD = .88$) and the group of participants who read another article ($M = 4.91$, $SD = .73$), $t(307.09) = -1.21$, $p = .23$. Agreement with the ideas from the Middle Eastern prejudice article did not differ between the group of participants who read the Middle Eastern prejudice

article ($M = 4.72$, $SD = .71$) and the group of participants who read another article ($M = 4.71$, $SD = .80$), $t(606) = .20$, $p = .84$. However, agreement with the ideas from the weight prejudice article was slightly higher among the group of participants who read the weight prejudice article ($M = 4.63$, $SD = .82$) than among the group of participants who read another article ($M = 4.45$, $SD = .85$), $t(606) = 2.54$, $p = .011$. Thus, while overall persuasive effects were negligible, the weight prejudice article may have had some slight effect on participants' stated opinions, as measured based on specific statements drawn from the articles.

Hypothesis 1: Prejudice Reduction (AFAS Dislike by Topic Condition)

Hypothesis 1 predicted that AFAS Dislike scores would be lower among participants who read the article about weight prejudice. However, the mean AFAS Dislike score among those who were exposed to the article about weight prejudice ($M = 2.71$, $SD = 1.63$) did not differ from the mean among those who were exposed to the other articles ($M = 2.87$, $SD = 1.61$), $t(592) = 1.18$, $p = .24$. The other two AFAS subscales also showed no significant difference by author condition—for both, $t(592) < 1.7$, $p > .05$. These results fail to confirm Hypothesis 1, but they also help rule out social desirability effects of the weight article condition on the weight prejudice measure. If participants in the weight prejudice topic condition had expressed weaker anti-fat attitudes, then it would be possible that the change was due to an increased desire to appear unprejudiced, rather than actual decreased prejudice.

Hypothesis 2: Author Attractiveness Process

Hypothesis 2a. Hypothesis 2a predicted that the thin author would be viewed as more attractive than the fat author, on average. Recall that each participant rated the attractiveness of both authors, not just the one that was paired with the article. As predicted, participants rated the thin author ($M = 2.79$, $SD = .91$) as more attractive than the fat author ($M = 2.55$, $SD = .88$),

$t(721) = 7.23, p < .0001$. The mean difference in attractiveness ratings, .24, was kept relatively low by the tendency of many participants ($n = 432$) to issue the same rating for both images. Among those 290 participants who did distinguish between the two images, however, 214 (74%) rated the thin author as more attractive, $p < .0001$ (exact binomial test). This result confirms Hypothesis 2a.

Hypothesis 2b. Hypothesis 2b predicted that higher AFAS Dislike ratings would be associated with lower attractiveness ratings for the fat author, but not for the thin author. Even though attractiveness ratings for the two authors were highly correlated with each other, $r(720) = .50, p < .0001$, there was a significant negative correlation between AFAS Dislike scores and the attractiveness rating for the fat author, $r(718) = -.23, p < .0001$, but no correlation between Dislike scores and the attractiveness rating for the thin author, $r(717) = .05, p = .22$. These two correlations were significantly different from each other, Fisher's $z = 5.38, p < .0001$. In other words, highly prejudiced people found the fat author particularly unattractive, but they did not rate the thin author's appearance any differently.

Unsurprisingly given the correlations among the AFAS subscales, similar relationships emerged between the other two subscales and the attractiveness ratings. There was a negative correlation between Fear of Fat scores and the attractiveness rating for the fat author, $r(718) = -.16, p < .0001$, but no correlation between Fear of Fat and the attractiveness rating for the thin author, $r(717) = -.05, p = .16$. These two correlations were significantly different from each other, Fisher's $z = 2.11, p = .035$. There was a negative correlation between Willpower scores and the attractiveness rating for the fat author, $r(718) = -.27, p < .0001$, but no correlation between Willpower and the attractiveness rating for the thin author, $r(717) = -.01, p = .86$. These two correlations were significantly different from each other, Fisher's $z = 5.05, p < .0001$.

Dislike scores for those who rated the fat author as more attractive than the thin author ($M = 2.58, SD = 1.38$) did not differ from Dislike scores for those who rated the two authors as equally attractive ($M = 2.39, SD = 1.35$), $t(503) = 1.12, p = .26$. Dislike scores were substantially higher among those who rated the thin author as more attractive ($M = 3.59, SD = 1.80$), than in either of the other two groups—for both, $t > 4.96, p < .0001$. Similar patterns emerged for the other two subscales. Table 3 shows the mean AFAS subscale scores, split by whether or not the thin author received a higher attractiveness rating than the fat author. These results support Hypothesis 2b, which predicted that Dislike scores would correlate with preference for the thin author image in attractiveness ratings.

Hypothesis 2c. Hypothesis 2c predicted that evaluations of the persuasive appeal would be more favorable among those who rated the author they saw as relatively attractive. The attractiveness ratings for both authors (for each participant, the image that was paired with the article *and* the other image) were highly correlated with the subscale measuring favorability toward the article, both $r_s > .20, p_s < .0001$, probably due to a generalized effect like acquiescence bias. Difference scores were therefore computed by subtracting each participant's attractiveness rating of the author he or she saw from his or her attractiveness rating of the other author. None of the article evaluation subscales were correlated with the difference scores—for all, $-.07 < r(583) < 0, p > .15$. Even limiting the sample only to those who rated the two author images differently, the group who preferred the author they saw and the group who preferred the other author did not differ on any of the article evaluation subscales, all $t_s < 1.6, p_s > .1$. These results fail to support Hypothesis 2c: the relative attractiveness of the author did not affect evaluations of the article. Since the author images were very similar to each other, and many

participants rated them as equally attractive, perhaps there was not enough variability introduced by attractiveness to change the article evaluations.

Main Effects of Demographic Variables on Article Evaluations

Main effects on the article evaluation measures were tested for all available demographic variables, even though only political identification and body size pertain directly to the hypotheses. The results for gender, race, age, education, and region are reported in Appendix A.

Body size measures. There was no correlation between perceived body size and the Favorability subscale, $r(576) = .02, p = .57$. There was a weak positive correlation between perceived body size and the Bias subscale, $r(576) = .10, p = .020$. There was also a weak positive correlation between perceived body size and the Opinion Change subscale, $r(576) = .08, p = .045$. These results will be clarified by interactions reported below. There were no correlations between the article evaluation measures and BMI, all $r(508) < .07, p > .12$.

Political identification. The articles used in this study adopt positions (anti-discrimination, pro-environment) generally associated with liberal political views in the United States. The main effects of political identification reflect this fact: ratings on the Favorability subscale were higher for liberals ($M = 4.31, SD = 1.05$) than for conservatives ($M = 4.01, SD = 1.32$), $t(285.77) = 2.68, p = .008$. Despite this difference on Favorability, perceptions of Bias and Opinion Change did not differ by political identification, both $t(561) < 1.27, p > .20$.

Liberals also agreed with the actual ideas drawn from the articles more than conservatives did. Agreement with the ideas from the environment article was higher among liberals ($M = 5.01, SD = .66$) than among conservatives ($M = 4.70, SD = .92$), $t(333.82) = 4.55, p < .0001$. Agreement with the ideas from the Middle Eastern prejudice article was higher among liberals ($M = 4.85, SD = .67$) than among conservatives ($M = 4.51, SD = .90$), $t(343.89) = 4.90, p$

< .0001. Agreement with the ideas from the weight prejudice article was higher among liberals ($M = 4.55$, $SD = .79$) than among conservatives ($M = 4.42$, $SD = .87$), $t(690) = 2.01$, $p = .045$.

Although all three differences in opinions were significant, Figure 1 illustrates that the difference was smaller for the weight prejudice issues.

To test whether the link between political identification and the Favorability subscale was due to differences in agreement with the ideas in the articles, mediation analysis was conducted using unstandardized regression coefficients as recommended by Baron and Kenny (1986). By itself, political identification (0 = liberal, 1 = conservative) predicted Favorability ratings, $B = -.30$, $t(561) = -2.91$, $p = .004$. Separately, political identification predicted agreement with the ideas from whichever article was viewed, $B = -.34$, $t(561) = -4.85$, $p < .0001$. Controlling for political identification, agreement with the ideas predicted Favorability ratings, $B = .69$, $t(559) = 12.45$, $p < .0001$. Controlling for agreement with the ideas, political identification no longer predicted Favorability ratings, $B = -.07$, $t(559) = -.71$, $p = .48$. A Sobel test using the exact calculation for the standard error (Baron & Kenny, 1986; Sobel, 1982) showed that the mediation effect was significant, $Z = -4.50$, $p < .0001$. These results suggest that agreement with the ideas from the articles fully mediated the main effect of political identification on Favorability.

Main Effects of Conditions on Article Evaluations

Author condition (Hypothesis 3). Hypothesis 3 predicted that the thin author would be evaluated more favorably than the fat author. Favorability ratings did not differ overall between the fat author ($M = 4.23$, $SD = 1.11$) and the thin author ($M = 4.21$, $SD = 1.21$), $t(670) = .25$, $p = .80$. Bias ratings did not differ overall between the fat author ($M = 4.78$, $SD = 1.32$) and the thin author ($M = 4.68$, $SD = 1.39$), $t(668) = .94$, $p = .35$. Opinion Change ratings did not differ overall between the fat author ($M = 2.90$, $SD = 1.26$) and the thin author ($M = 2.83$, $SD = 1.27$), $t(667) =$

.70, $p = .49$. These results do not support Hypothesis 3. Any effects of author on article evaluations must be more complex than a main effect.

Topic condition. Favorability ratings did not differ across the topics, $F(2, 669) = .58, p = .56$. Bias ratings differed only marginally across topics, $F(2, 667) = 2.69, p = .068$. Opinion Change ratings also differed slightly across topics, $F(2, 666) = 3.07, p = .047$. A Tukey post-hoc analysis for Opinion Change suggests that there was no difference between the environment and Middle Eastern prejudice conditions, $p = 1.0$, but the weight prejudice condition elicited marginally higher Opinion Change ratings than each of the other two conditions, both $ps < .09$. Figure 2 illustrates the differences in article evaluations by topic condition.

Henceforth, I will report statistical tests with the Middle Eastern prejudice and environment topics pooled. These tests were also conducted using a three-level factor for topic, and the results were similar.

Using the binary topic condition variable, Favorability ratings did not differ between the weight topic ($M = 4.17, SD = 1.21$) and the other topics ($M = 4.25, SD = 1.14$), $t(670) = .83, p = .41$. Bias ratings were slightly higher for the weight topic ($M = 4.88, SD = 1.33$) than for the other topics ($M = 4.65, SD = 1.37$), $t(668) = 2.08, p = .038$. Opinion Change ratings were also slightly higher for the weight topic ($M = 3.03, SD = 1.25$) than for the other topics ($M = 2.78, SD = 1.26$), $t(667) = 2.48, p = .013$. The latter difference may reflect the tendency for the weight topic to change actual reported opinions (see the “Opinion Differences by Article Conditions” subsection above).

Main Effect of AFAS Dislike on Article Evaluations

There was an overall negative correlation between AFAS Dislike and Favorability ratings, $r(591) = -.13, p = .002$. This correlation is unsurprising, since one of the three articles is

about many of the same biases measured by the Dislike subscale. Indeed, the correlation was present for the weight stigma article, $r(209) = -.22, p = .001$, but not for the other articles—for both, $-.10 < r < 0, p > .20$. There was no correlation between AFAS Dislike and Bias or Opinion Change ratings, both $r(591) < .05, p > .35$.

Regression Models for Article Evaluations

Hypotheses 4, 5, 6, and 7 predicted interactions among five key variables—author, topic, AFAS Dislike, perceived body size, and political identification. Another goal of this study is to identify any relationships among these variables which might not stem from existing theory. Therefore, an exploratory modeling procedure was used. Results which do not pertain to the hypotheses will be reported in Appendix A.

Separate regression models were constructed with each of the three article evaluation subscales as response variables. Predictors included author condition (thin = 1, fat = 0), topic condition (weight prejudice = 1, other = 0), the AFAS Dislike subscale, perceived body size, and political identification (conservative = 1, liberal = 0). Models were constructed via backward elimination, beginning with all possible interaction terms and removing the term with the highest p -value at each step, without removing the applicable lower-order terms while higher-order terms were still present. The threshold for statistical significance was not adjusted to accommodate the number of terms in the model, because several of them pertained to specific predictions made. For this reason, the remaining terms yield only limited additional information.

Perceived body size and political identification were initially chosen for inclusion because of their theoretical importance. Other demographic variables, including race and gender, were tested on the reduced models, and no meaningful interactions were found.

Favorability. See Table 4 for the regression model for Favorability. The model explained a small but significant amount of the variance in Favorability, adjusted $R^2 = .064$, $F(9, 546) = 5.20$, $p < .0001$. Results suggest that four two-way interactions were important—author condition by political identification, topic condition by political identification, topic condition by perceived body size, and AFAS Dislike by perceived body size. The author by political identification interaction pertains to Hypothesis 6, and will be addressed in the next section. The other three interactions will be addressed in Appendix A.

Bias. See Table 5 for the regression model for Bias. The model explained a small but significant amount of the variance in Bias, adjusted $R^2 = .073$, $F(16, 539) = 3.75$, $p < .0001$. Results suggest that two interactions were especially important—author condition by AFAS Dislike and author by topic by political identification. The other two significant three-way interactions were much smaller in magnitude—topic by AFAS Dislike by perceived body size and topic by political identification by AFAS Dislike. The author by Dislike interaction pertains to Hypothesis 4, and the author by topic by political identification interaction pertains to Hypothesis 7; they will be addressed in the next section. The two smaller interactions will be addressed in Appendix A.

Opinion Change. The model failed to explain a significant amount of the variance in Opinion Change, adjusted $R^2 = .016$, $F(31, 524) = 1.29$, $p = .14$. Therefore, Opinion Change will not be considered further in this report.

Key Interactions for Article Evaluations

The important interactions will be examined in terms of both Favorability and Bias, even if they were significant in only one of the regression models, for the purpose of comparison.

Hypothesis 4: Author condition by AFAS Dislike. Hypothesis 4 predicted that AFAS Dislike scores would correlate negatively with favorable evaluations of the fat author, but not the thin author. The regression model for Favorability did not include a significant two-way interaction between author condition and AFAS Dislike, failing to support Hypothesis 4. However, the model for Bias did include such an interaction (see Table 5). This interaction for Bias was also significant in a two-variable regression model, $B = .17$, $t(589) = 2.39$, $p = .017$. For the thin author, the AFAS Dislike subscale was positively correlated with the article evaluation Bias subscale, $r(298) = .13$, $p = .026$. For the fat author, there was no significant correlation, $r(291) = -.07$, $p = .24$. Figure 3 illustrates this interaction by plotting the regression lines relating AFAS Dislike to Bias in the thin author condition, $B = .11$, and in the fat author condition, $B = -.06$.

For Favorability ratings, in an isolated two-variable regression model, there was only a marginally significant interaction between author condition and AFAS Dislike, $B = -.10$, $t(589) = -1.66$, $p = .098$. The direction of the interaction was the opposite of what was predicted: the negative correlation between Dislike and Favorability was strong for the thin author, $r(298) = -.19$, $p = .001$, but nonsignificant for the fat author, $r(291) = -.05$, $p = .37$. Since the slope of the interaction term was not significantly different from zero, however, more information would be needed before drawing meaningful conclusions from this somewhat surprising result.

Hypothesis 5: Author condition by perceived body size. Hypothesis 5 predicted that body size would be negatively correlated with preference for the thin author over the fat author. No significant interaction effect was found, either in the larger regression model for Favorability (see Table 4), or in a model including only the relevant variables, $B = .02$, $t(574) = .56$, $p = .58$.

This result does not confirm Hypothesis 5. Instead, it is evidence that fat people do not show ingroup bias in the context of persuasive communication.

Hypothesis 6: Author condition by political identification. Hypothesis 6 predicted that liberal participants would favor the fat author and conservative participants would favor the thin author. The larger regression model for Favorability included a significant two-way interaction in the expected direction between author and political identification (see Table 4). This interaction was also significant in a two-way ANOVA model, $F(1, 559) = 5.12, p = .024$. A Tukey post-hoc comparison indicated that, in the fat author condition, Favorability was higher for liberal participants ($M = 4.40, SD = .99$) than for conservative participants ($M = 3.86, SD = 1.24$), $p = .002$. In the thin author condition, liberals ($M = 4.20, SD = 1.11$) and conservatives ($M = 4.13, SD = 1.37$) did not differ, $p = .95$. The differences between the author conditions for each political identification were not significant, but their signs were in the expected directions, both $ps > .3$. See Figure 4 for an illustration of this interaction effect. These results partially confirm the interaction effect predicted by Hypothesis 6: liberals favor the fat author more than conservatives do.

As in the larger regression model, a two-way ANOVA model for Bias yielded no significant interaction between author and political identification, $F(1, 559) = .06, p = .80$.

Hypothesis 7: Author condition by topic condition by political identification. Hypothesis 7 predicted that participants would view the fat author writing about weight prejudice as particularly biased, and that they would rate him unfavorably in that condition.

The larger regression model for Bias included a significant three-way interaction between author, topic, and political identification (see Table 5). This interaction was also significant in a three-way ANOVA model, $F(1, 555) = 7.26, p = .007$. A Tukey post-hoc comparison indicated

that liberals perceived the fat author writing about weight prejudice as particularly biased ($M = 5.46$, $SD = .98$), relative to the thin author writing about weight prejudice ($M = 4.65$, $SD = 1.30$), $p = .009$, the thin author writing about other topics ($M = 4.62$, $SD = 1.43$), $p = .001$, or the fat author writing about other topics ($M = 4.45$, $SD = 1.39$), $p < .0001$. For conservatives, there were no significant differences in perceptions of bias across conditions. See Figure 5 for an illustration of this interaction effect. The two-way interaction between author and topic was significant for liberals, $F(1, 381) = 12.16$, $p = .0005$, but not for conservatives, $F(1, 174) = .86$, $p = .36$.

Importantly, there was no three-way interaction between author, topic, and political identification for Favorability ratings, $F(1, 555) = .29$, $p = .59$. In a three-way ANOVA model for Favorability, only the two-way interactions reported above and in Table 4 were significant—author by political identification, $F(1, 555) = 4.82$, $p = .029$, and topic by political identification, $F(1, 555) = 10.04$, $p = .002$. This result indicates that even though liberals perceived the fat author as especially biased when he was writing about weight prejudice, they did not rate him less favorability because of that bias.

Hypothesis 7a predicted that there would be a two-way interaction between author and topic for Bias ratings, such that the fat author writing about weight prejudice would be viewed as the most biased. The present results show that the prediction holds for liberals, but not for conservatives. Hypothesis 7b predicted that the fat author writing about weight prejudice would also be evaluated less favorably than the other combinations of conditions. The results do not support this hypothesis, even for liberals.

Relationship between Favorability and Bias

Questions are raised by the fact that author, topic, and political identification interacted to predict Bias ratings, while author and political identification interacted independently of topic to

predict Favorability ratings. In particular, liberals perceived the fat author writing about weight prejudice as particularly biased, but they did not perceive him less favorably for it, even though Favorability and Bias were negatively correlated in general. These results are detailed above.

To further assess the relationship between the Favorability and Bias subscales of the article evaluation measure, an additional regression model was constructed with Favorability as the response variable. Predictors included the Bias subscale, author condition (thin = 1, fat = 0), topic condition (weight prejudice = 1, other = 0), and political identification (conservative = 1, liberal = 0). The model was constructed via backward elimination, beginning with all possible interaction terms and removing the term with the highest p-value at each step, without removing the applicable lower-order terms while higher-order terms were still present. See Table 6 for the resulting model. The model explains a small but significant amount of the variance in Favorability, adjusted $R^2 = .089$, $F(7, 555) = 8.88$, $p < .0001$. Results suggest that three two-way interactions were important—author by political identification, topic by political identification, and Bias ratings by political identification. The interactions of the conditions with political identification were explained above; the new Bias ratings by political identification interaction will be examined below.

Bias by political identification interaction. In a two-variable model, the Bias subscale interacts with political identification to predict the Favorability subscale, $B = -.17$, $t(559) = -2.37$, $p = .018$. There was a moderate negative correlation between Bias and Favorability for liberals, $r(383) = -.18$, $p = .0004$, and a strong negative correlation between Bias and Favorability for conservatives, $r(176) = -.33$, $p < .0001$. Figure 6 illustrates this interaction by plotting the regression lines relating Bias to Favorability for liberal participants, $B = -.14$, and for conservative participants, $B = -.31$. It seems that liberal readers view bias as less of a serious

problem in their overall impression of the articles, perhaps because they interpret the concept of bias differently when it comes to media sources adopting liberal positions.

Liberals in the weight prejudice topic condition. The results about liberals in the weight prejudice condition are particularly interesting. Liberals attributed more bias to the fat author writing about weight prejudice ($M = 5.46, SD = .98$) than to the thin author writing about the same topic ($M = 4.65, SD = 1.30$), $t(131.43) = 4.19, p < .0001$. Based on the negative correlation between Bias and Favorability, it might be reasonable to expect liberals to rate the fat author less favorably than the thin author in the same topic condition. However, for liberals, the difference in Favorability between the fat author ($M = 4.23, SD = 1.13$) and the thin author ($M = 3.97, SD = 1.08$) in the weight topic condition was not significant, $t(139) = 1.40, p = .16$. In fact, its direction, favoring the fat author, was consistent with the two-way interaction between topic and political identification. The Bias subscale and the topic condition did not interact to predict Favorability, $B = .04, t(666) = .55, p = .59$, suggesting that Bias and Favorability have a similar negative relationship regardless of the topic condition.

The negative correlation between Bias and Favorability was not significantly different from zero when the sample was limited only to liberals in the weight topic condition, $r(139) = -.13, p = .12$, but this may be due to the relatively small sample size. For liberals in the other topic conditions, the correlation was slightly stronger and was significantly different from zero, $r(242) = -.17, p = .006$. However, these two correlations were not significantly different from each other, Fisher's $z = .40, p = .69$.

These results suggest that the liberals' willingness to favor an author they perceive as biased cannot be explained by a reversal of the typical negative relationship between perceived Bias and Favorability.

Discussion

This study exposed participants to an online editorial, manipulating the apparent weight of the author and the topic addressed by the article. Participants did not evaluate the thin author any more favorably than the fat author on average. Instead, evaluations followed several more complicated patterns. Most notably, liberals evaluated the fat author more favorably than conservatives did across topic conditions, but liberals also perceived the fat author writing about weight prejudice as particularly biased, without any accompanying loss of favorability. Liberals may define bias differently from conservatives, such that they perceive more of it when members of targeted groups discuss group-based prejudice, but this process seems not to interfere with liberals' greater overall receptivity to communications from members of these groups.

In the remainder of the Discussion section, I will review the findings for each hypothesis, discuss limitations of the current study and directions for further research, and address some broader implications of this line of research.

Hypotheses

One of the goals of this study was to identify relationships between stigmatized sources and topics pertaining to prejudice which warrant further investigation. The most important findings related to each hypothesis will be discussed here; some additional effects are discussed in Appendix A.

Hypothesis 1: Prejudice reduction. Hypothesis 1 predicted that exposure to the weight prejudice article would reduce scores on the AFAS Dislike scale, which measures prejudice against fat people. However, Dislike scores were no lower in the weight topic condition than in the other conditions. Past work has found that information about body weight being outside of one's control can reduce expressions of prejudice (Crandall, 1994; Lewis et al., 1997). In the

current study, the weight prejudice article included such information, but the procedure did not require participants to rehearse the information or process it thoroughly, which may explain the lack of prejudice reduction.

Hypothesis 2: Attractiveness process evidence. Hypothesis 2a predicted that the thin author would be viewed as more attractive than the fat author, on average (see Puhl & Heuer, 2009). Participants did rate the thin version of the image as more attractive than the fat version, despite the relatively small difference between the two images. Hypothesis 2b predicted that people high in weight prejudice would be especially likely to view the fat author as unattractive. Indeed, weight prejudice was linked to lower attractiveness ratings of the fat author, but not the thin author. Hypothesis 2c predicted that people who described the author they saw as relatively attractive would also rate the article by that author more favorably (see Messner et al., 2008). However, attractiveness ratings did not meaningfully predict article evaluations, perhaps because the two images were so similar to each other. The direct measure of attractiveness may have been more sensitive to participants' preferences than the indirect procedure of showing the author image paired with an editorial piece.

Hypothesis 3: Favoring the thin author. Hypothesis 3 predicted an overall prejudicial effect of author condition, in which the fat author would be evaluated less favorably than the thin author. There was no such main effect, failing to support Hypothesis 3. Past studies have found more complicated effects of author identity, such as liberals favoring a Black author but conservatives favoring a White author (Ramsey & Gonzalez, 2011), and it is possible that such effects canceled out any overall prejudicial effect in the current study (see Hypotheses 6 and 7).

Hypothesis 4: Prejudice score and negative evaluations of the fat author. Hypothesis 4 predicted that participants high in weight prejudice would evaluate the fat author particularly

unfavorably. However, favorable evaluations of the fat author relative to the thin author did not differ between high- and low-prejudice participants. This result is related to the fact that there was no overall preference for the thin author—although many people did exhibit anti-fat attitudes, these attitudes did not directly translate into negative evaluations of persuasive appeals from fat individuals. In other words, evaluations of stigmatized sources do not merely reflect generalized prejudice.

Hypothesis 5: Participant body size and author evaluations. Hypothesis 5 predicted that relatively thin participants would be more likely to favor the thin author, and relatively fat participants would be more likely to favor the fat author. However, there was no relationship between participant body size and author evaluations. This result can be viewed as evidence that fat people do not show ingroup bias in persuasion settings, even when they express weaker anti-fat attitudes than thin people. This distinction is probably related to the fact that article evaluations do not seem to reflect prejudice in a simple way (see Hypothesis 4).

Hypothesis 6: Political identification and author evaluations. Hypothesis 6 predicted that liberal participants would favor the fat author more than conservative participants would. This prediction was made because Ramsey and Gonzalez (2011) found a similar effect for race, in which liberals favored a Black author more than conservatives did on a prejudice-related topic. In the present study, liberal participants evaluated the fat author more favorably than conservative participants did, supporting Hypothesis 6. This effect extended across all topic conditions, so it cannot be explained by a motivation to appear unprejudiced in the weight topic condition alone. The effect also emerged in a model holding variables like weight prejudice and body size constant, so it cannot be explained by differences between liberals and conservatives along these dimensions.

This result is surprising in light of the fact that weight prejudice is not a high-profile political issue, nor is it one which commonly defines a “liberal” platform. Perhaps there is an overarching difference in the way that liberals and conservatives respond to stigmatized sources communicating about social issues. Alternately, perhaps the fat author is perceived as lower in socioeconomic status, and liberals’ favorable response stems from a greater receptivity to communications from lower status individuals. The present study provides no way to distinguish between these two explanations.

Hypothesis 7: Author ratings across topic conditions. Hypothesis 7a predicted that the combination of the fat author and the weight prejudice topic would be viewed as the *most biased* out of all the conditions. Hypothesis 7b predicted that this same combination of conditions would be rated the *least favorably*. These predictions emerged from the fact that people are prone to attribute bias to persuaders they find unattractive, and this bias can result in negative reactions, at least in a marketing context (Messner et al., 2008; Reinhard et al., 2006).

The present study found a more complicated relationship than expected between author, topic, and evaluations. Liberal participants showed the expected pattern, viewing the fat author writing about weight prejudice as more biased than the thin author or the fat author writing about other topics. However, conservative participants did perceive any conditions to be more biased than any others. The relationship was less complicated for favorability—liberals rated the fat author more favorably than conservatives did, regardless of the topic (see Hypothesis 6). These results qualify Hypothesis 7a and fail to support Hypothesis 7b. This pattern can perhaps be explained by the tendency for audiences not to reward “unbiasedness” when it seems to go against group-based interests (Petty et al., 2001).

It is counter-intuitive that liberals rated the fat author more favorably across topic conditions, even though they perceived him as particularly biased in the weight topic condition. Follow-up analysis showed that this willingness to favor a biased author cannot be explained by a reversal of the typical view that bias is a disadvantage. In particular, both liberals and conservatives showed an inverse relationship between bias and favorability ratings in general. This relationship was weaker for liberals than for conservatives, but it did extend across all conditions, including the condition in which the fat author was paired with the weight prejudice topic.

Hypothesis 7 emerged from the tendency to attribute disproportionate bias to unattractive persuaders, but this past finding cannot explain the present results (Messner et al., 2008; Reinhard et al., 2006). Liberal and conservative participants both rated the fat author as less attractive than the thin author, but only liberals attributed extra bias to the fat author in the weight prejudice condition.

The results suggest that liberals and conservatives perceive the concept of bias differently when it comes to social issues. For conservatives, alignment between the group identity of an author and the type of prejudice being discussed does not imply that the author is biased. Perhaps liberals notice this alignment more, perhaps they define bias more broadly, or perhaps they reserve extra scrutiny for messages from stigmatized individuals, thus “noticing” more bias in the condition where the fat author’s group identity is highlighted (see Petty et al., 1999). However, the present results suggest that liberals respond more favorably to communications from members of stigmatized groups, even when they view those communications as biased. Those liberals who attribute *extra* bias (relative to other liberals) do tend to respond less favorably to the communications, but this process seems to occur separately from the effect of

author identity on their overall ratings. In other words, for liberals, the particular kind of bias that is perceived when the fat author writes about weight stigma is unique in that it does not imply a loss of favorability.

Limitations and Future Research

Existing literature provides little information about the relationship between stigmatized author identities and topics related to stigma, so the present study took a broad approach. Results point toward a variety of possible research directions, all of which could be addressed more thoroughly by narrower, more targeted paradigms.

First, the current results imply that liberals and conservatives view bias differently when it comes to social issues, but this study did not provide a mechanism for analyzing the precise nature of the difference, only that it seems to permit liberals to favor stigmatized authors regardless of perceived bias. More information is needed on the different ways that liberals and conservatives interpret bias. Future studies could try to develop scales to distinguish between kinds of bias, or ask liberals and conservatives directly for their views about the concept of bias.

Second, more information is needed regarding the reason why liberals respond more favorably to the fat author than conservatives do. If perceived socioeconomic class and perceived weight could be manipulated separately, then reactions to weight-based class inferences could be separated from reactions to body size itself, helping to clarify whether the current results can be explained by class inferences.

Third, the present study used articles liberals tended to agree with more than conservatives did. Because political identification was found to be an important factor determining how fat authors were perceived, future studies should develop persuasive communications which are equally liked by liberals and conservatives prior to the manipulation.

This feature would make it possible to show that differences between liberals and conservatives are due to their respective approaches to politics rather than merely byproducts of differences between people who agree and people who disagree with the persuasive appeals.

Another limitation of the current study is that the articles were not persuasive enough to change people's attitudes much. Stronger arguments might enable future studies to examine actual effects of author identity on short term attitude change. Such studies might use more specific topics, such as particular instances of prejudice or discrimination, which would avoid the difficulties inherent in addressing an entire abstract prejudice-concept at once.

The current study is also limited by the fact that it only applies to a particular dimension of prejudice. Reactions to fat authors may operate quite differently from reactions to authors who are targeted by forms of prejudice which are more frequently mentioned in political conversations, like racism or homophobia. Future studies should manipulate the *dimension* of stigmatized author identity as well as the topic of the communication, to more readily compare, for example, the present findings about weight to past findings about race.

Future studies involving weight prejudice could also manipulate the gender of the author, or use all female authors instead of all male authors, since the effects of weight prejudice are often stronger for female targets than for male targets (Puhl & Heuer, 2009; Wooley et al., 1979). Participants in the present study did not evaluate communications from the thin author more favorably than those from the fat author, but perhaps reactions would be more harshly prejudicial if the authors were female.

Finally, future work should examine the properties of the new body size measure used in the present study. Participants who were relatively fat according to the socially perceived body size measure exhibited weaker anti-fat attitudes than thin participants, even though past studies

have rarely found a connection between prejudice and body size as measured by Body Mass Index (BMI). While BMI and socially perceived body size are certainly related to each other, they do not measure the same thing, and not enough attention has been given to the limitations of BMI in a social context. It could be argued that the item I used to measure perceived body size actually measures a willingness to identify oneself with weight-related issues, rather than the way participants truly believe they are perceived by others. If this were true, then the present study's finding that fat people show less weight prejudice than thin people would be complicated by the implication that some participants could have identified themselves as relatively fat because they were less prejudiced in the first place. In short, the direction of causality between perceived body size and weight prejudice remains unknown.

Implications

This study sought to test how people react to persuasive appeals from stigmatized sources about topics related to stigma itself, in the particular case of a fat author writing about weight prejudice. Participants were exposed to an online editorial, manipulating the apparent weight of the author and the topic addressed by the article.

Findings suggest that people do not always evaluate communications from fat authors negatively, even when they do express strong anti-fat prejudice. This result provides some reassurance that fat authors are not automatically disregarded when they write about prejudice. However, conservatives seem to be less receptive to communications from fat authors than liberals are, which implies that because of their body size alone, fat authors may be at a disadvantage when communicating to particular subsets of the population.

Liberals seem to view the concept of personal bias less negatively than conservatives do in the context of the social issues addressed by this study. This difference may reflect a particular

approach to group identities and intergroup prejudice, in which liberals attach additional credibility to perspectives marked by personal experiences of stigma (see Ramsey & Gonzalez, 2011). This same approach might also be what makes liberals more receptive to communications about social issues from stigmatized groups in general. More information about this difference could contribute to our understanding of how political groups operate even outside the realm of persuasion.

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Footnotes

¹The word “fat” is not used here in a pejorative sense. The National Association to Advance Fat Acceptance employs it in their efforts to resist prejudice, and the term is viewed by some as preferable to alternatives like “overweight,” which implies a contrasting normative standard, and “obese,” which implies a medical condition (see Crandall, 1994; Lewis et al., 1997).

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Table 1

Number of Participants by Condition

Article Topic	<u>Weight Stigma</u>		<u>Middle-Eastern Stigma</u>		<u>Environmental Protection</u>	
	Fat	Thin	Fat	Thin	Fat	Thin
Valid <i>n</i>	101	107	97	100	90	89

Table 2

Principal Component Analysis of Response Items

Factor Loadings	Item Text
Favorability^a	
.813	In general, how much do you agree or disagree with the opinion expressed in the article?
.777	How similar do you think the author is to you?
.749	To what extent do you think that you and the author would agree on other issues?
.708	In your opinion, how realistic is the author when it comes to this topic?
.698	In your opinion, how trustworthy is the author when it comes to this topic?
.666	In your opinion, how knowledgeable is the author about the topic of the article?
.647	In your opinion, how persuasive is the article?
.644	In your opinion, how credible is the author when it comes to this topic?
.565	In your opinion, how well-written is the article?
Opinion Change^b	
.824	To what extent do you think reading this article changed your opinion about the issue?
.726	To what extent do you think reading this article would change other people's opinions about the issue?
Bias^c	
.743	In your opinion, how biased is the author when it comes to this topic?
.700	In your opinion, how self-interested is the author when it comes to this topic?
.662	In your opinion, how passionate is the author about this topic? ^d

^a Eigenvalue = 5.94; Proportion of variance = .32

^b Eigenvalue = 1.62; Proportion of variance = .18

^c Eigenvalue = 1.23; Proportion of variance = .11

^d This item is not included in the Bias scale.

Table 3

AFAS Subscales and Author Attractiveness

AFAS Subscale	Thin author rated more attractive		Otherwise	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Dislike	3.59	1.80	2.42	1.35
Fear of Fat	6.12	2.37	5.37	2.75
Willpower	6.85	1.91	5.76	2.05

Note. All differences are significant, $p < .0003$.

Table 4

Regression Table for Favorability

Term	<i>B</i>	<i>SE B</i>	β^d
Intercept	5.35	0.27	4.21***
Author Condition ^a	-0.18	0.12	-.01
Topic Condition ^b	-0.97	0.26	-.05
Political Identification ^c	-0.80	0.17	-.16**
AFAS Dislike	-0.22	0.08	-.11*
Perceived Body Size	-0.12	0.05	.01
Author x Political Identification	0.51	0.21	.12*
Topic x Political Identification	0.61	0.22	.14**
Topic x Perceived Body Size	0.12	0.05	.13**
AFAS Dislike x Perceived Body Size	0.03	0.01	.10*

Note. Adjusted $R^2 = .064$. $F(9, 546) = 5.20$, $p < .0001$.

^a The thin author was coded as 1, the fat author as 0.

^b The weight stigma topic was coded as 1, other topics as 0.

^c Conservative political identification was coded as 1, liberal as 0.

^d Standardized versions of each predictor variable (including the dummy variables for the conditions, but not including the response variable) were used to compute the standardized coefficients. Significance tests were computed using the standardized model.

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

Table 5

Regression Table for Bias

Term	<i>B</i>	<i>SE B</i>	β^d
Intercept	3.68	0.40	4.75***
Author Condition ^a	-0.24	0.27	-.09
Topic Condition ^b	2.23	0.64	.17**
Political Identification ^c	0.28	0.34	.03
AFAS Dislike	0.08	0.12	.06
Perceived Body Size	0.19	0.07	.16**
Author x Topic	-1.11	0.28	-.14*
Author x Political Identification	-0.62	0.30	-.02
Author x AFAS Dislike	0.17	0.07	.13*
Topic x Political Identification	-0.53	0.57	-.15**
Topic x AFAS Dislike	-0.26	0.20	.02
Topic x Body Size	-0.28	0.11	-.08
Political Identification x AFAS Dislike	0.12	0.09	.00
AFAS Dislike x Perceived Body Size	-0.03	0.02	-.03
Author x Topic x Political Identification	1.59	0.51	.18**
Topic x Political Identification x Dislike	-0.34	0.16	-.12*
Topic x Dislike x Perceived Body Size	0.07	0.04	.12*

Note. Adjusted $R^2 = .073$. $F(16, 539) = 3.75$, $p < .0001$.

^a The thin author was coded as 1, the fat author as 0.

^b The weight stigma topic was coded as 1, other topics as 0.

^c Conservative political identification was coded as 1, liberal as 0.

^d Standardized versions of each predictor variable (including the dummy variables for the conditions, but not including the response variable) were used to compute the standardized coefficients. Significance tests were computed using the standardized model.

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

Table 6

Regression Table for Favorability, Including Bias as a Predictor

Term	<i>B</i>	<i>SE B</i>	β^d
Intercept	5.10	0.21	4.21***
Author Condition ^a	-0.21	0.11	-.03
Topic Condition ^b	-0.25	0.12	-.03
Political Identification ^c	0.10	0.39	-.14**
Bias Subscale	-0.13	0.04	-.25***
Author x Political Identification	0.44	0.20	.10*
Topic x Political Identification	0.59	0.21	.13**
Bias Subscale x Political Identification	-0.17	0.07	-.11*

Note. Adjusted $R^2 = .089$. $F(7, 555) = 8.88$, $p < .0001$.

^a The thin author was coded as 1, the fat author as 0.

^b The weight stigma topic was coded as 1, other topics as 0.

^c Conservative political identification was coded as 1, liberal as 0.

^d Standardized versions of each predictor variable (including the dummy variables for the conditions, but not including the response variable) were used to compute the standardized coefficients. Significance tests were computed using the standardized model.

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

Table 7

Relationships between Dislike and Bias with Topic and Political Identification Held Constant

Topic Condition	Political Identification	B^a	$SE B$	r^b	p -value
Weight topic	Liberal	.11	.07	.14	.14
Weight topic	Conservative	-.10	.12	-.11	.42
Other topics	Liberal	-.01	.06	-.01	.91
Other topics	Conservative	.09	.06	.12	.15

^a These are unstandardized regression coefficients calculated from simple linear regression models predicting Bias with AFAS Dislike.

^b These are correlation coefficients measuring the same linear relationship.

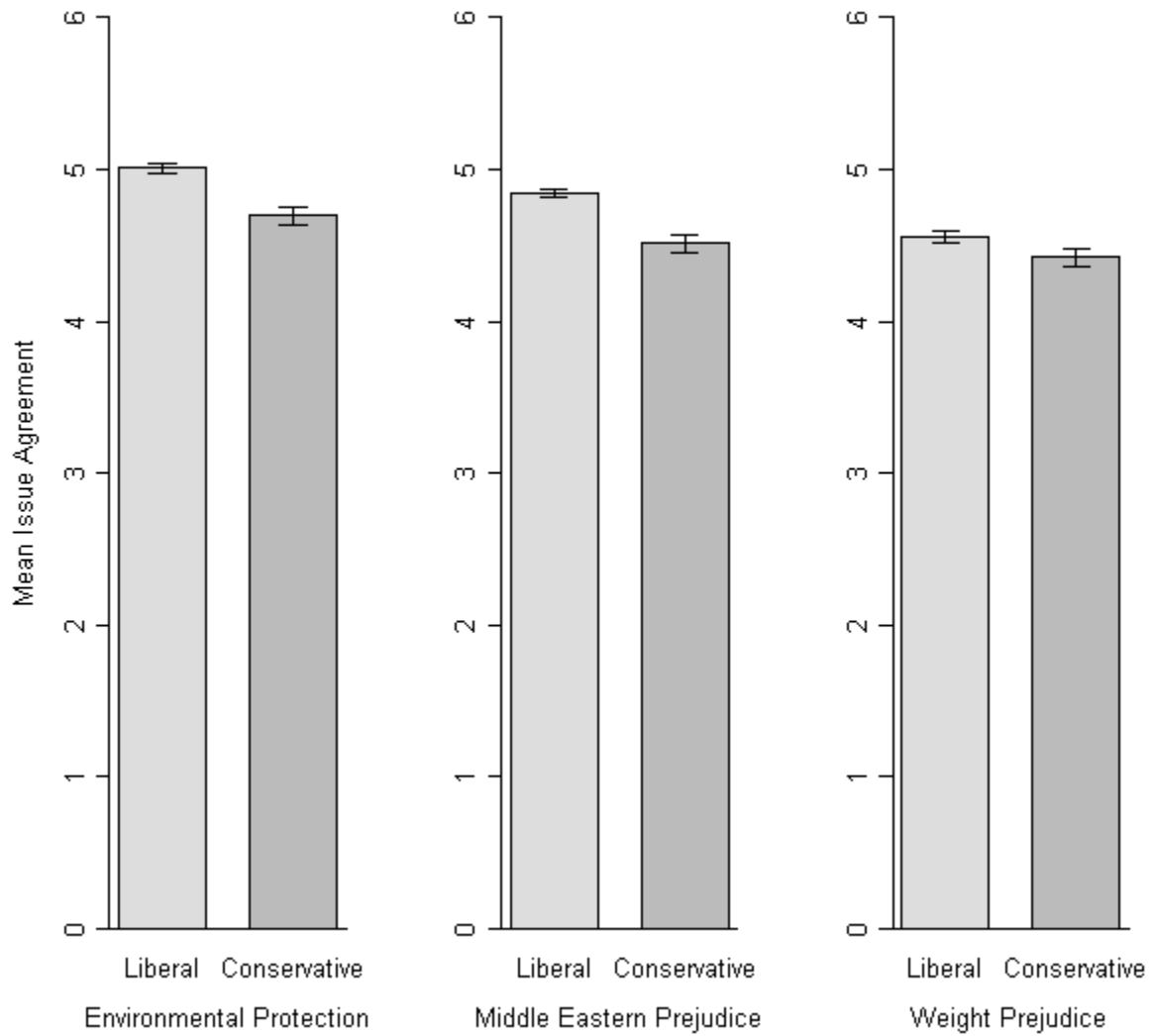


Figure 1. Agreement with the issues from the articles by political identification.

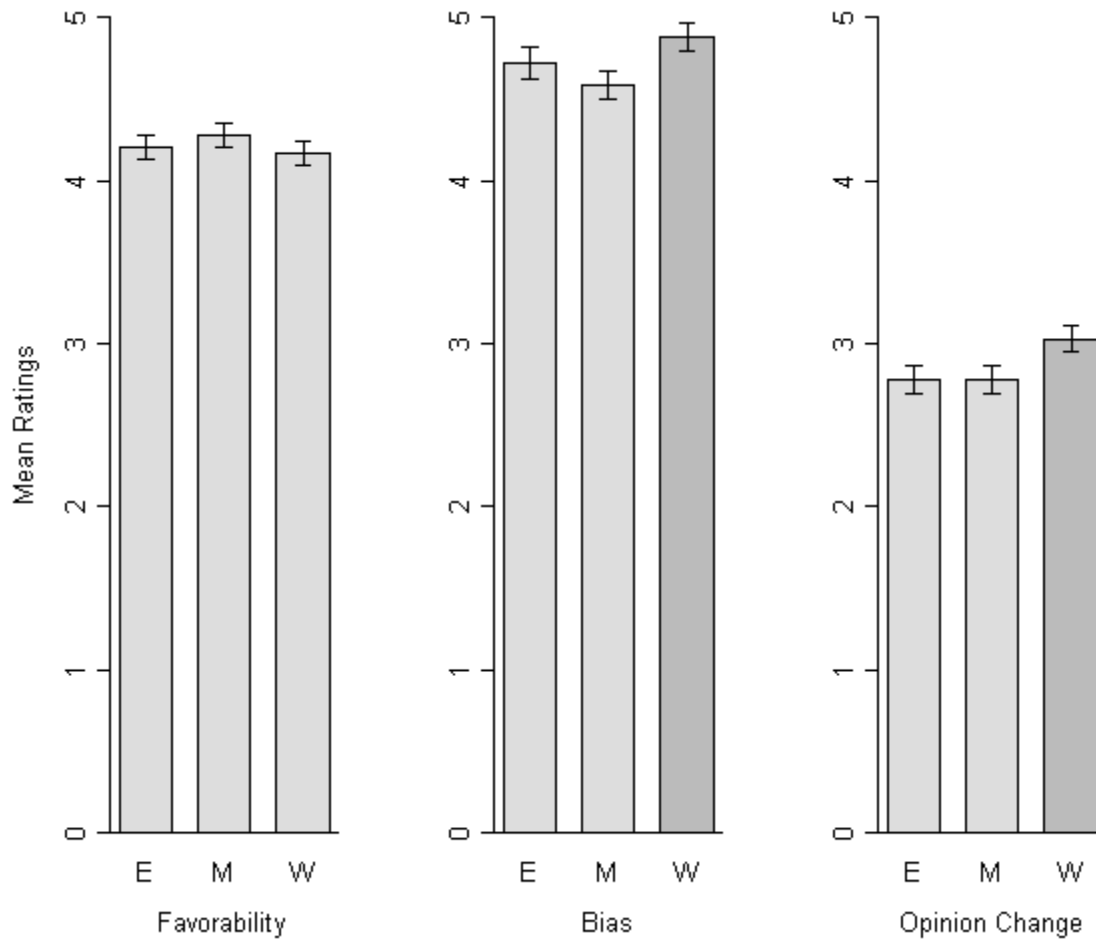


Figure 2. Article evaluation ratings by topic condition. “E” indicates the environmental protection topic, “M” indicates the Middle Eastern stigma topic, and “W” indicates the weight stigma topic.

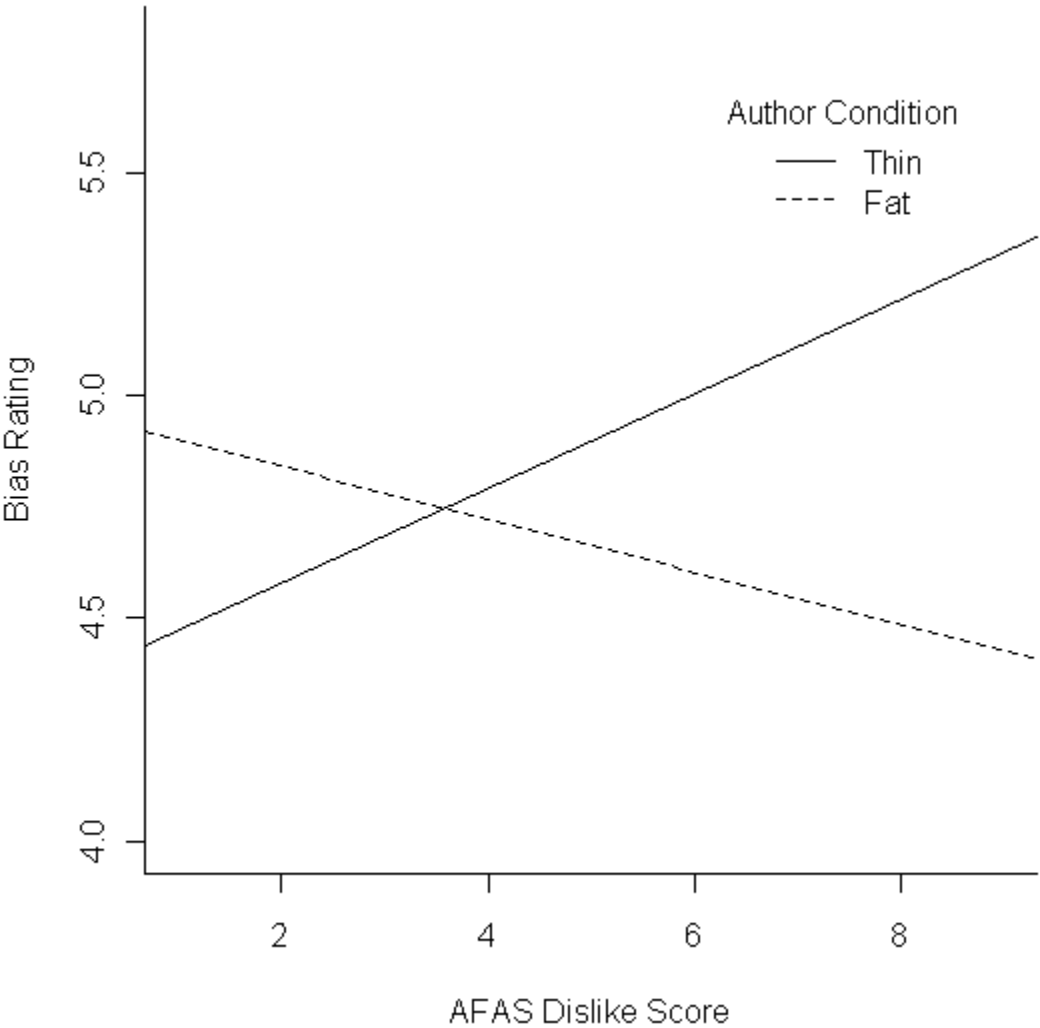


Figure 3. Regression slopes illustrating the interaction between author condition and AFAS Dislike on Bias ratings.

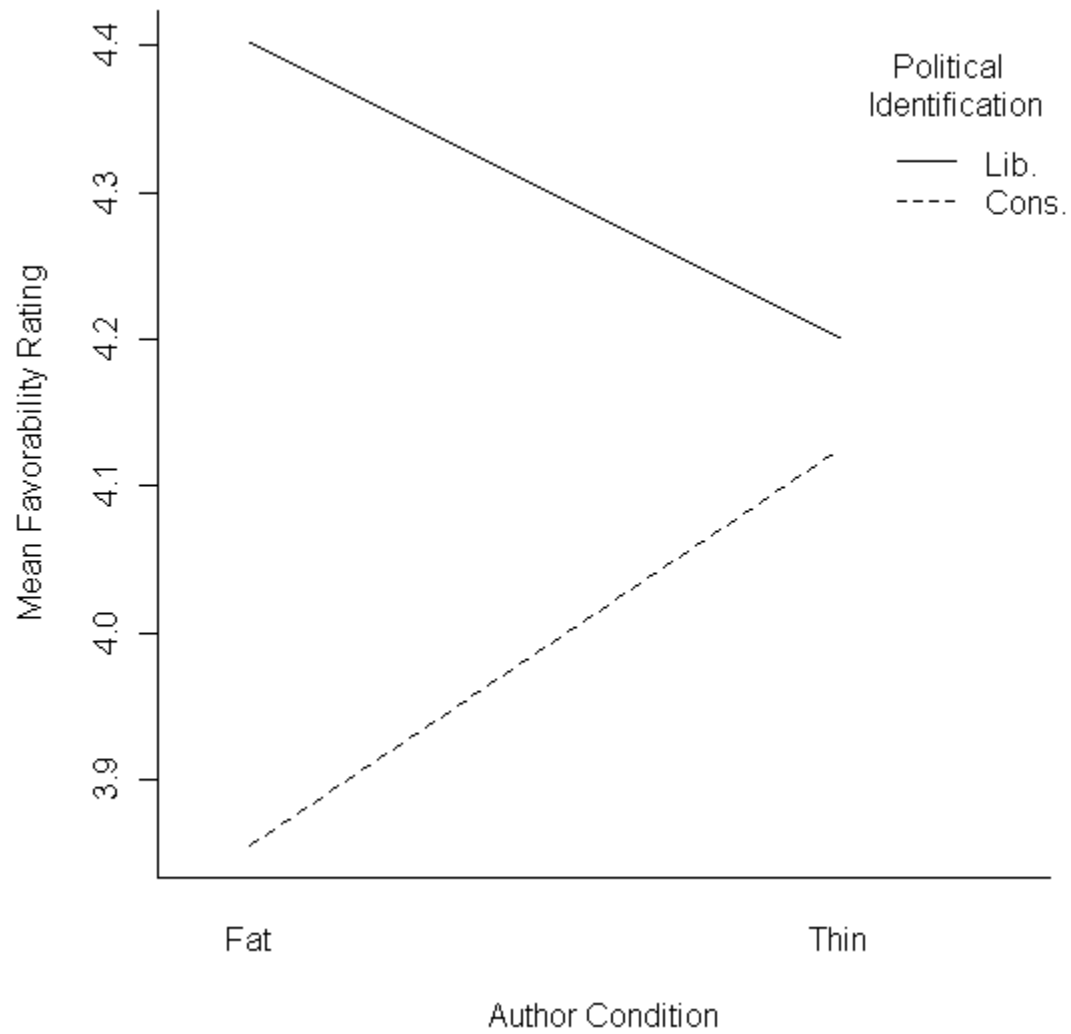


Figure 4. Two-way interaction between author and political identification on Favorability ratings. This pattern was the same regardless of topic condition.

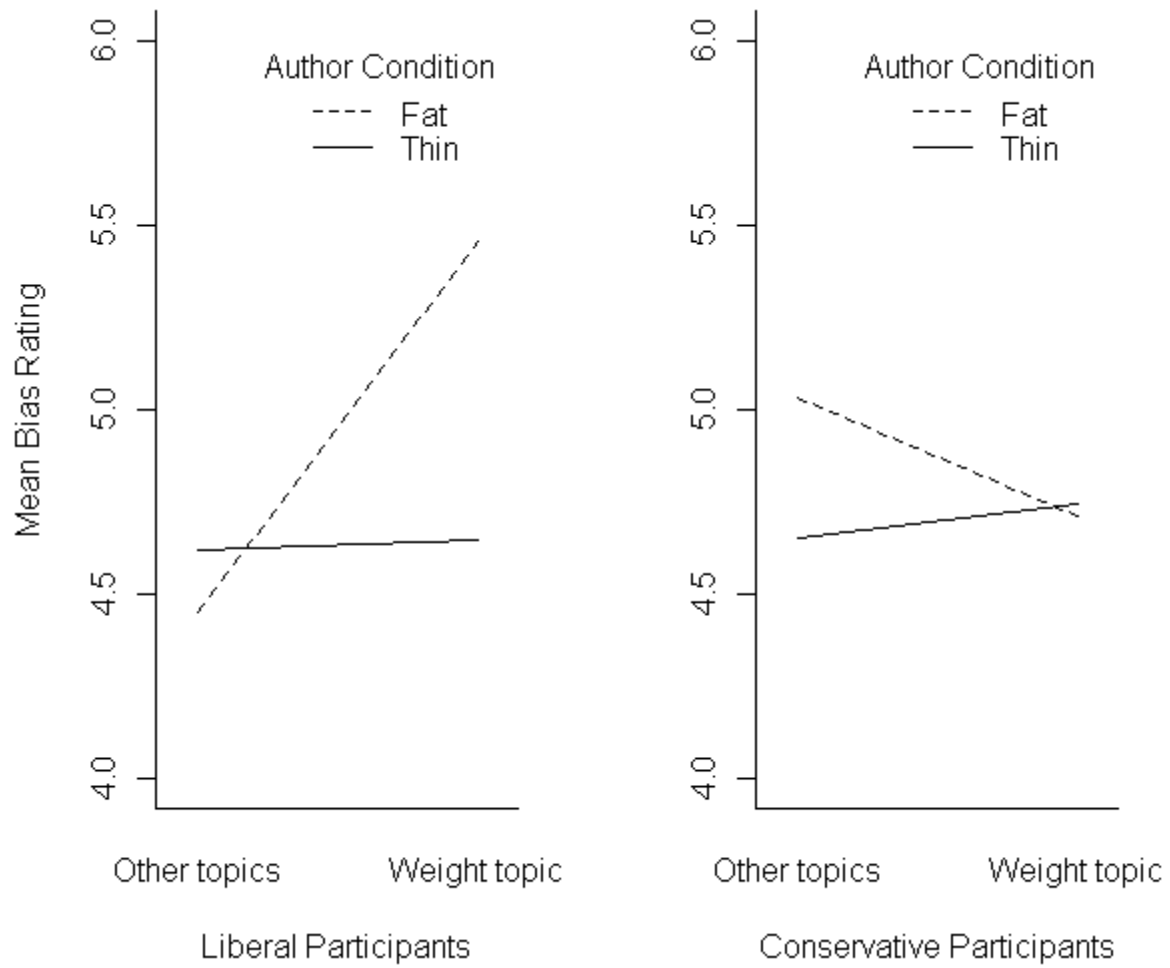


Figure 5. Three-way interaction between author, topic, and political identification on Bias ratings. The interaction between author and topic was significant for liberals, but not for conservatives.

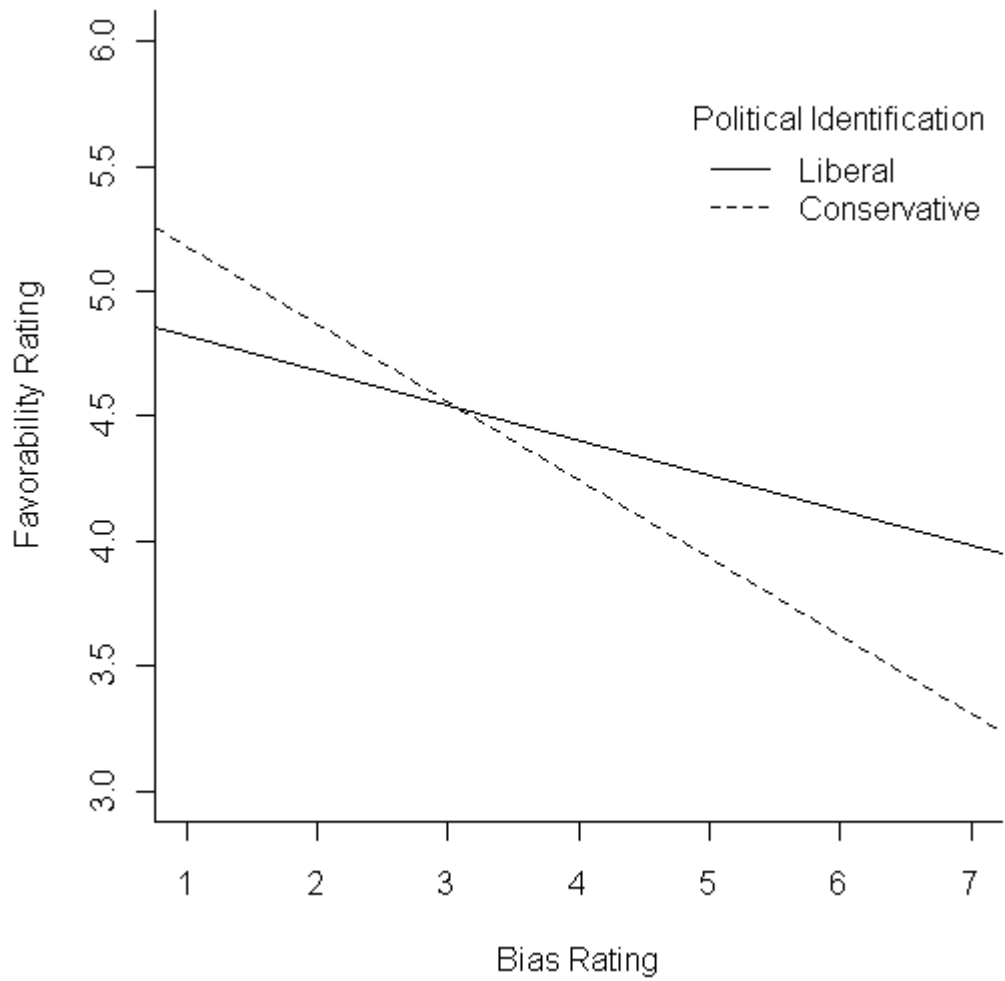


Figure 6. Regression slopes illustrating the interaction between Bias rating and political identification on Favorability ratings.

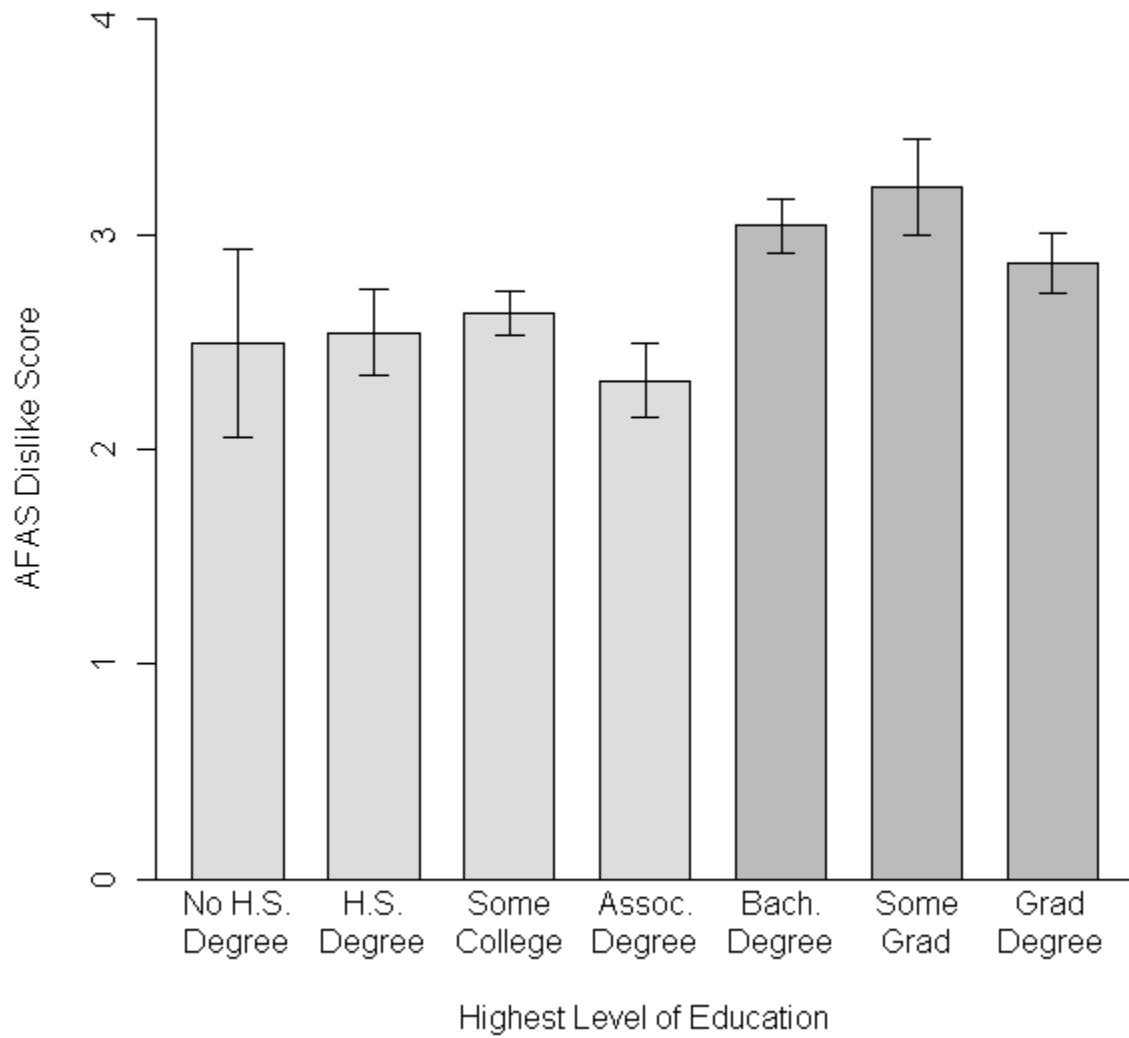


Figure 7. AFAS Dislike scores by education level.

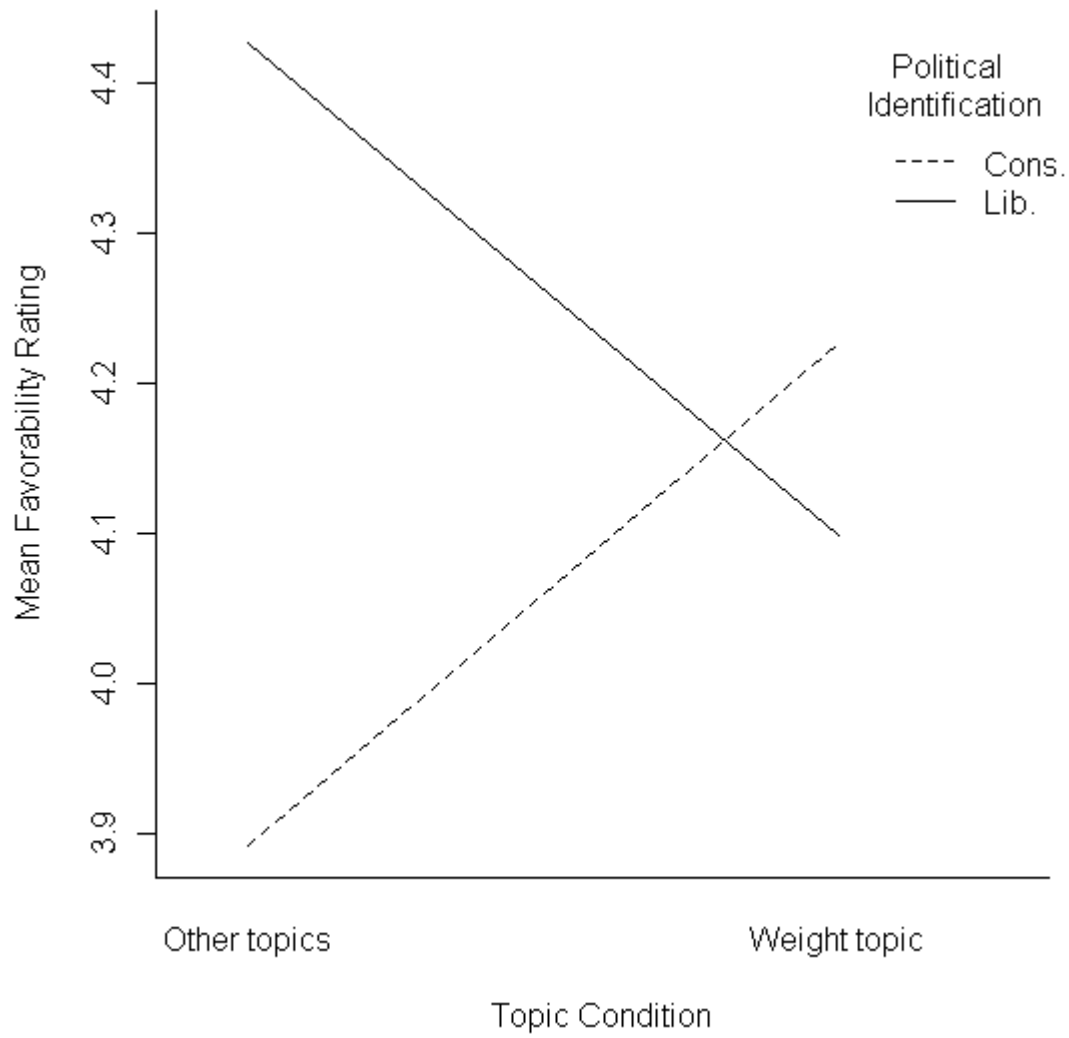


Figure 8. Two-way interaction between topic and political identification on Favorability ratings.

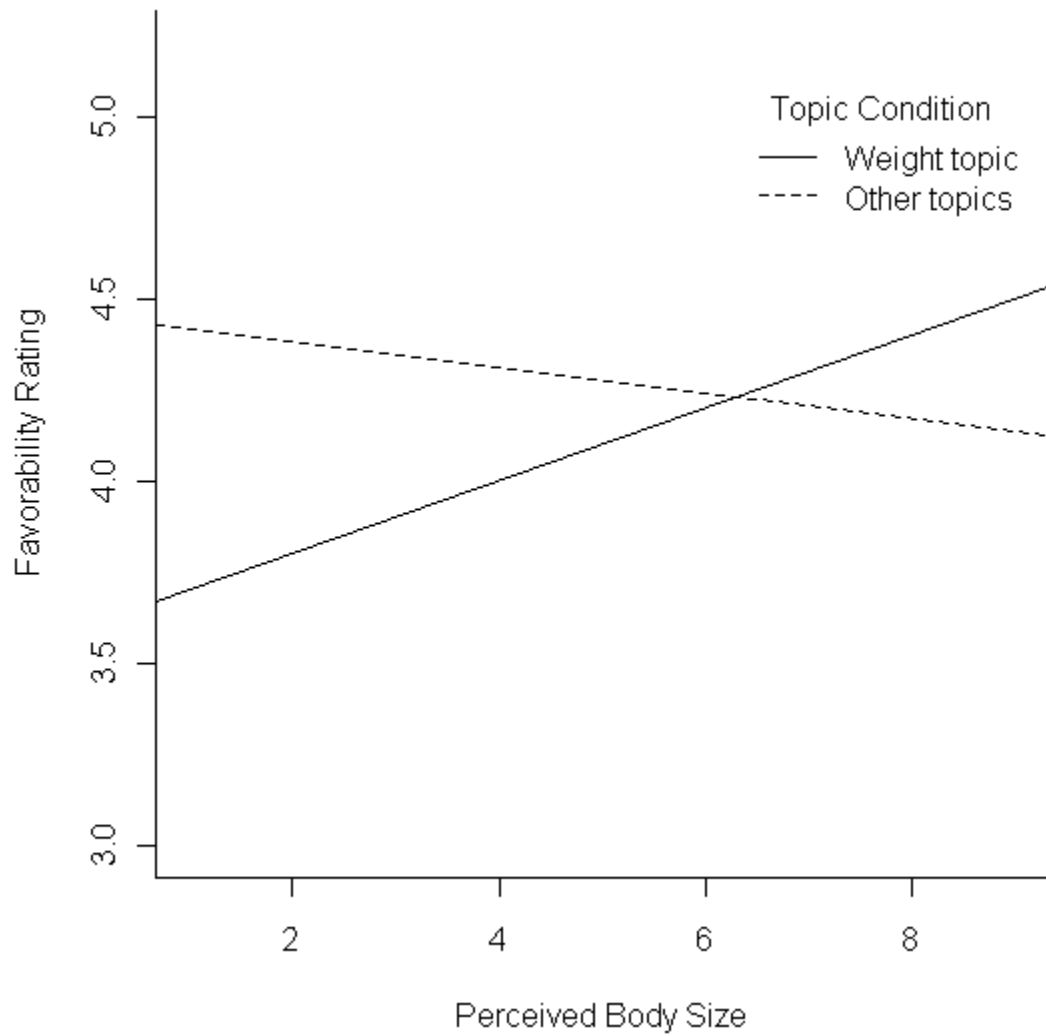


Figure 9. Regression slopes illustrating the interaction between topic condition and perceived body size on Favorability ratings.

Appendix A: Additional Analysis

Three parts of the Results section mention related statistical information which did not warrant inclusion in the main body of the report. This information is reported here. First, I will address correlations between demographic variables and the Anti-Fat Attitudes Scale (AFAS), which measures weight prejudice. Second, I will address relationships between demographic variables and the article evaluation measures. Third, I will address five significant interaction terms from the models predicting article evaluations which may be meaningful despite not having been hypothesized.

Correlations between the Anti-Fat Attitudes Scale (AFAS) and Demographic Variables

Correlations between the AFAS subscales, particularly the Dislike subscale, and demographic variables were examined in light of past research. The results for body size and political identification are reported above, in the Results section. The results for gender, race/ethnicity, age, formal education, and region of the United States are reported here.

Gender. Past work has shown that men score higher than women on the Dislike and Willpower subscales, but women score higher than men on the Fear of Fat subscale (Crandall, 1994). Similar effects emerge in the present sample. On the Dislike subscale, men ($M = 3.20$, $SD = 1.78$) scored higher than women ($M = 2.56$, $SD = 1.45$), $t(340.1) = 4.63$, $p < .0001$. On the Willpower subscale, men ($M = 6.49$, $SD = 1.97$) scored higher than women ($M = 5.90$, $SD = 2.08$), $t(695) = 3.53$, $p = .0004$. On the Fear of Fat subscale, men ($M = 4.89$, $SD = 2.71$) scored lower than women ($M = 5.92$, $SD = 2.59$), $t(695) = -4.75$, $p < .0001$.

Race/ethnicity. Limited past work has shown that Black people may exhibit less weight prejudice than White people under certain circumstances (e.g., Hebl et al., 2009). In the present sample, dislike scores differed across racial groups, $F(5, 681) = 2.26$, $p = .047$. A Tukey post-hoc

analysis demonstrated a significant pairwise difference between Hispanic ($M = 2.14$, $SD = 1.42$) and Asian ($M = 3.62$, $SD = 1.85$) individuals, $p = .016$. The mean scores on the Dislike subscale for all other racial/ethnic groups ($M = 2.78$, $SD = 1.57$) were between those for Asian and Hispanic participants. There was no significant difference in Dislike scores between White and Black participants, $p = 1.0$. Conclusions about the relationship between race and anti-fat attitudes are difficult to draw in the current sample because of its relatively small number of racial minority participants.

Age. Past work with United States samples has found no correlation between weight prejudice and age (Hebl et al., 2008). The present sample contained participants of widely dispersed ages, but it still showed no correlation between Dislike scores and age, $r(728) = .03$, $p = .39$. This result provides further evidence that the correlation between weight prejudice and age in Germany (Hilbert et al., 2008) does not also exist in the United States.

Education. A German study found that prejudice against fat people was lower among individuals with more formal education (Hilbert et al., 2008). The present sample showed an opposite effect, in which participants in the three groups with at least a four-year college degree scored higher on the Dislike subscale than participants in the other four groups (see Figure 7). Overall differences among the seven education levels were significant, $F(6, 700) = 3.26$, $p = .004$. Splitting the sample into two groups, participants with at least a four-year college degree ($n = 340$, $M = 3.01$, $SD = 1.61$) scored higher on Dislike than other participants ($n = 367$, $M = 2.55$, $SD = 1.53$), $t(705) = -3.89$, $p = .0001$. This result might be explained by differences in socioeconomic status between the education levels, in which higher status individuals denigrate fat people more severely.

Region. Dislike scores did not differ across Census regions, $F(3, 725) = 1.71$, $p = .16$.

Main Effects of Demographic Variables on Article Evaluation Measures

Main effects on the article evaluation measures were tested for all available demographic variables. The results for political identification and body size are reported above, in the Results section. The results for gender, race, age, education, and region are reported here.

Gender. The article Favorability ratings were higher for women ($M = 4.36$, $SD = 1.10$) than for men ($M = 3.94$, $SD = 1.21$), $t(569) = 4.04$, $p < .0001$. Neither the Bias ratings nor the Opinion Change ratings differed between women and men—for both, $t(569) < 1.7$, $p > .1$.

Race. The article Favorability ratings were lower for White participants ($M = 4.18$, $SD = 1.15$) than for non-White participants ($M = 4.49$, $SD = 1.11$), $t(560) = 2.45$, $p = .015$. The Bias ratings were higher for White participants ($M = 4.77$, $SD = 1.34$) than for non-White participants ($M = 4.45$, $SD = 1.46$), $t(560) = -2.10$, $p = .036$. The Opinion Change ratings were lower for White participants ($M = 2.72$, $SD = 1.17$) than for non-White participants ($M = 3.27$, $SD = 1.45$), $t(125.07) = 3.50$, $p = .0007$. These results suggest that non-White participants were generally more receptive to the arguments presented in the three articles.

Age. Participant age was not correlated with the Favorability, Bias, or Opinion Change scales—for all, $-.03 < r < .06$, $p > .1$.

Education. Favorability and Bias ratings did not differ between participants with and without four-year college degrees, both $ts < 1.8$, $p > .05$, but the Opinion Change ratings were lower for participants with at least a four-year college degree ($M = 2.64$, $SD = 1.15$) than for participants without one ($M = 2.98$, $SD = 1.30$), $t(574.31) = 3.30$, $p = .001$. This result could be explained in at least three ways. More educated participants could have been less willing to admit that their views had changed, they could have been less prone to believe that their views had changed, or they could have actually been less likely to change their views.

Region. Participants from the four Census regions of the US did not differ on the Favorability, Bias, or Opinion Change scales, $F < 2.14$, $p > .05$.

Additional Significant Interactions from Regression Models

The regression models predicting Favorability and Bias contained several significant interactions which were not specifically hypothesized. The hypothesis-relevant interactions were discussed above, in the Results section. The additional interactions are examined here.

Topic condition by political identification. The larger regression model for Favorability included a significant two-way interaction between topic and political identification (see Table 4). This interaction was also significant in a two-way ANOVA model, $F(1, 559) = 9.40$, $p = .002$. A Tukey post-hoc comparison indicated that, in the weight topic condition, Favorability did not differ between liberal participants ($M = 4.10$, $SD = 1.11$) and conservative participants ($M = 4.23$, $SD = 1.35$), $p = .88$. In the non-weight topic conditions, Favorability ratings were higher among liberal participants ($M = 4.43$, $SD = 1.00$) than among conservative participants ($M = 3.89$, $SD = 1.29$), $p = .0002$. See Figure 8 for an illustration of this interaction effect. Recall that, while liberals agreed more with the issues raised by all three articles than conservatives did, the difference was smallest for the weight topic issues (see Figure 1).

Topic and political identification also interacted to predict Bias, $F(1, 559) = 5.28$, $p = .022$. This effect is qualified by the three-way interaction between author, topic, and political identification, which was addressed extensively in the Results section.

Topic condition by perceived body size. The larger regression model for Favorability included a significant two-way interaction between topic condition and perceived body size (see Table 4). This interaction was also significant in a two-variable regression model, $B = .13$, $t(574) = 2.99$, $p = .003$. For the weight topic condition, perceived body size was positively correlated

with Favorability ratings, $r(205) = .18, p = .008$. For the other topics, there was no significant correlation, both $r(369) = -.07, p = .19$. Figure 9 illustrates this interaction by plotting the regression lines relating perceived body size to Favorability in the weight topic condition, $B = .10$, and in the other topic conditions, $B = -.03$. In short, people who indicated they were perceived as relatively fat responded more favorably to the article advocating against weight prejudice, perhaps because they had experienced such prejudice and felt the article legitimated their experiences.

There was also a marginally significant interaction between topic and body size to predict Bias, $B = -.10, t(574) = -1.94, p = .053$. For the weight topic condition, perceived body size was uncorrelated with Bias ratings, $B = -.01, r(205) = -.01, p = .83$. For the other topics, perceived body size was positively correlated with Bias ratings, $B = .09, r(369) = .15, p = .003$.

AFAS Dislike by perceived body size. The larger regression model for Favorability included a small two-way interaction between AFAS Dislike and perceived body size (see Table 4). This interaction was only marginally significant in a two-variable regression model, $B = .03, t(569) = 1.85, p = .065$. The sign of the interaction term suggests that the negative effect of Dislike on Favorability was smaller among participants who believed that others saw them as relatively fat. Indeed, for those with perceived body size ratings less than the median, there was a moderate negative correlation between AFAS Dislike and Favorability ratings, $r(194) = -.20, p = .006$, but for those with body size ratings greater than or equal to the median, the correlation was smaller and non-significant, $r(375) = -.08, p = .11$.

One possible explanation for this interaction might be that, among some relatively thin participants, the Dislike subscale captures a generalized negativity which extends to Favorability ratings across topics, but the more personal nature of the Dislike subscale for relatively fat

participants makes this effect less likely. However, more information would be needed to draw serious conclusions about this relatively small interaction term, especially because the expected error rate for the group of tests reported here is relatively high.

Body size and AFAS Dislike did not interact to predict Bias ratings, $B = -.01$, $t(569) = -.69$, $p = .49$.

Topic condition by political identification by AFAS Dislike. The larger regression model for Bias included a small three-way interaction between topic, political identification, and AFAS Dislike (see Table 5). This interaction was only marginally significant in an isolated three-variable regression model, $B = -.30$, $t(550) = -1.88$, $p = .061$. In a model which also includes the first-order terms for author condition and perceived body size, the three-way interaction between topic, political identification, and Dislike was significant, $B = -.35$, $t(546) = -2.17$, $p = .030$. Table 7 illustrates the linear relationships between AFAS Dislike and Bias with topic and political identification held constant at each of the four possible combinations of those two variables. Liberals in the weight topic condition and conservatives in the other topic conditions appear to exhibit a particularly strong relationship between AFAS Dislike and perceptions of bias, although conclusions about this interaction must be constrained by its small magnitude and relative inapplicability to existing theory.

Topic condition by AFAS Dislike by perceived body size. The larger regression model for Bias included a significant but very small three-way interaction between topic, AFAS Dislike, and perceived body size (see Table 5). This interaction was not significant in a three-variable regression model, $B = .05$, $t(565) = 1.36$, $p = .18$, nor was it significant when controlling for the first-order effects of author and political identification, $B = .04$, $t(546) = 1.21$, $p = .23$. However, in these regression models, the two-way interaction term between topic and perceived

body size was significant, regardless of whether author and political identification were held constant—for both, $B < -.23$, $t < -2.17$, $p < .031$. This two-way interaction was discussed above. Because the three-way interaction was very small (standardized $\beta = .07$ in the larger regression model), there is little reason to believe that the observed effect was meaningfully distinct from the two-way interaction which found simply that relatively fat people responded more favorably to the articles advocating against weight prejudice.

Appendix B: Text of Online Survey Instrument

Note. A horizontal bar like the one below indicates a new web page. Response options and descriptions of what was displayed to participants are enclosed in [square brackets].

Welcome to this brief study about online communication, issues, and opinions. It is intended for people over the age of 18 living in the United States. It normally takes about 10 minutes to complete.

If you participate, you will be asked some questions about internet usage, followed by a series of questions about a wide variety of issues. You may be asked to read a news editorial and give your opinions about it. Your responses are very important to us. This research could provide valuable information about how people's opinions develop online.

There is no way to link your identity to any of your responses to these questions. This survey carries no more risk than ordinary anonymous internet use.

The University of Michigan Institutional Review Board Health Sciences and Behavioral Sciences has determined that this study is exempt from IRB oversight.

Answer the below questions and click the arrow to proceed if you consent to participate in this research. Note: Please do not use your browser's "back" button during this survey. You cannot return to previous questions.

In what year were you born?
[open-ended]

Do you currently live in the United States?
[yes/no]

What state do you live in?
[menu listing states and territories of the United States]

[The following text was only displayed to ineligible participants.]

Only participants who are at least 18 years old are allowed to participate in this survey. Also, because of the survey's content, we are only seeking participants who live in the United States. You have been directed to this screen because one of your responses implies that you are ineligible. Thank you for your time! If you have further questions about this survey, feel free to contact seburke@umich.edu.

How frequently do you normally use news media (including television, radio, online videos, newspaper and magazine articles, and online articles)?
[Never / Less than twice per month / Two or three times per month / Once or twice per week / Several times per week / Once per day / Two or more times per day]

Which types of news media do you most frequently use?

[Television / Radio / Internet / Print (newspaper, magazine, etc.) / Other: ____]

How frequently do you read news-related articles in print (e.g., in newspapers or magazines)?

[Never / Less than twice per month / Two or three times per month / Once or twice per week / Several times per week / Once per day / Two or more times per day]

How frequently do you read news-related articles online (including news blogs)?

[Never / Less than twice per month / Two or three times per month / Once or twice per week / Several times per week / Once per day / Two or more times per day]

On the next screen, you will be presented with a short editorial from an online news source. Please read the editorial so that you can give your opinions about it afterward. Your opinions are extremely valuable to us.

[Randomly selected image of editorial piece with author photo—see Appendix C]

Only click “next” when you are ready to give your opinions about the article. You will not be able to return to the article later.

[All items on this page had seven-point response scales. The similarly phrased items in the middle of the list were presented in a random order.]

In general, how much do you agree or disagree with the opinion expressed in the article?

[Strongly disagree.....Strongly agree]

In your opinion, how persuasive is the article?

[Not persuasive at all.....Extremely persuasive]

In your opinion, how well-written is the article?

[Not well-written at all.....Extremely well-written]

In your opinion, how knowledgeable is the author about the topic of the article?

[Not at all knowledgeable.....Extremely knowledgeable]

In your opinion, how realistic is the author when it comes to this topic?

[Not at all realistic.....Extremely realistic]

In your opinion, how passionate is the author about this topic?

[Not at all passionate.....Extremely passionate]

In your opinion, how self-interested is the author when it comes to this topic?

[Not at all self-interested.....Extremely self-interested]

In your opinion, how trustworthy is the author when it comes to this topic?

[Not at all trustworthy.....Extremely trustworthy]

In your opinion, how credible is the author when it comes to this topic?

[Not at all credible.....Extremely credible]

In your opinion, how biased is the author when it comes to this topic?

[Not at all biased.....Extremely biased]

How similar do you think the author is to you?

[Not at all similar.....Extremely similar]

To what extent do you think that you and the author would agree on other issues?

[Not at all.....To a great extent]

To what extent do you think reading this article changed your opinion about the issue?

[Not at all.....To a great extent]

To what extent do you think reading this article would change other people's opinions about the issue?

[Not at all.....To a great extent]

Now we want to see how much you remember about the article.

[Participants only saw the question set relevant to the particular article they were assigned to.]

Please check the box next to each idea that you remember being included in the article, whether you agree with it or not.

- Doctors show less respect for overweight patients.
- Employers are less likely to hire overweight people.
- On average, overweight people make less money than thin people.
- Diseases can cause weight gain.
- Weight is linked to genetics.
- Weight prejudice can contribute to eating disorders.
- Stress can contribute to weight gain.
- Weight discrimination is illegal.
- Being overweight is unhealthy.

Please check the box next to each idea that you remember being included in the article, whether you agree with it or not.

- Some civil rights activists show less respect for Middle Easterners than they should.
- Employers are less likely to hire Middle Eastern people.
- On average, Middle Eastern people make less money than White people.
- Assimilation is an effective way to reduce prejudice.

- Middle Eastern children feel insecure because of prejudice.
- Prejudice against Middle Eastern people can contribute to poor diplomatic choices.
- Prejudice against Middle Eastern people can contribute to stereotypical behaviors.
- Discrimination against Middle Eastern people is illegal.
- People gain psychological benefits from maintaining their culture.

Please check the box next to each idea that you remember being included in the article, whether you agree with it or not.

- Green energy companies frequently ignore basic environmental principles.
- Employees who try to implement environmental principles can lose their jobs.
- Environmentally friendly principles save companies a lot of money.
- Environmental degradation can hurt people's health.
- Environmental degradation can hurt agriculture.
- Environmental problems might start a deadly chain-reaction.
- Companies which violate basic environmental principles are breaking the law.
- Environmental protection is a waste of resources.
- Dumping toxic waste without a permit is illegal.

What is the author's gender?

[Open-ended]

What is the author's race?

[Open-ended]

What is the author's name?

[Open-ended]

[Instructions for participants in experimental conditions]

Now we have a mix of questions on several different topics, some of which may be related to the article and some of which may not. They are being displayed in a random order.

[Instructions for participants in control condition]

Now we have a mix of questions on several different topics. They are being displayed in a random order.

Please indicate the extent to which you agree or disagree with the following statements.

[Items were presented in a random order with seven-point response scales ranging from "Strongly disagree" to "Strongly agree."]

Unnecessary waste is a major problem in America today.

In the long run, it costs too much money to protect the environment.

Environmental destruction might start a deadly chain reaction.

It is important to integrate environmental protection as a core goal of business.

Prejudice against Middle Eastern people is a major problem in America today.

Middle Eastern people should not express their cultural heritage in America.

It is unethical to judge others based on their culture.

It is important for everyone to give Middle Eastern people fair and equal treatment.

Prejudice against overweight people is a major problem in America today.

Overweight people are usually lazy.

Weight is strongly linked to genetics.

It is important for everyone to give overweight people fair and equal treatment.

It is important for everyone to give minorities fair and equal treatment.

It is unethical to judge others based on physical characteristics that are not in their control.

Please indicate the extent to which you agree or disagree with the following statements.

[This is Crandall's (1994) Anti-Fat Attitudes Scale. Items were presented in a random order with ten-point response scales ranging from "Strongly disagree" to "Strongly agree."]

I really don't like fat people much.

I don't have many friends that are fat.

I tend to think that people who are overweight are a little untrustworthy.

Although some fat people are surely smart, in general, I think they tend not to be quite as bright as normal weight people.

I have a hard time taking fat people too seriously.

Fat people make me feel somewhat uncomfortable.

If I were an employer looking to hire, I might avoid hiring a fat person.

I feel disgusted with myself when I gain weight.

One of the worst things that could happen to me would be if I gained 25 pounds.

I worry about becoming fat.

People who weigh too much could lose at least some part of their weight through a little exercise.

Some people are fat because they have no willpower.

Fat people tend to be fat pretty much through their own fault.

In your opinion, what percentage of the people you run across in your daily life appear "fat"?

[0-100% graphical scale]

In your opinion, what percentage of your friends appear "fat"?

[0-100% graphical scale]

One of these photos is the author of the article you saw earlier. Which one did you see?

[Two options: fat author image / thin author image – presented in a random order. Only participants in experimental conditions saw this item]

In your opinion, how attractive are these people?

[Five-point scale from "Very unattractive" to "Very attractive" for each author image, presented in a random order]

Sometimes, some authors seem more persuasive than others. In this experiment, each participant originally saw one of these two photographs next to the article. Now we want you to help us predict the outcome of the experiment. Your ideas could be very helpful to us.

Which of the below photographs do you think would get more people to agree with the article, assuming the text is exactly the same?

[Two options: fat author image / thin author image – presented in a random order. Participants in the control condition were informed that "You were not asked to read a news editorial in this experiment, but many other participants did read one."]

[Question wording depended on the response to the previous question.]

Why do you think the [thinner/fatter] man typically gets the most agreement? (Feel free to mark multiple reasons.)

- The fatter man is more likely to be knowledgeable about the subject of the article.
- The fatter man is more likely to be knowledgeable in general.
- The thinner man is more likely to be biased about the subject of the article.
- The thinner man is more likely to have biased opinions in general.
- The fatter man is more likely to be trustworthy when it comes to the subject of the article.

- The fatter man is more likely to be trustworthy in general.
 - Readers are intentionally biased against the thinner man.
 - Readers are unintentionally biased against the thinner man.
 - Other reason: _____
-

[Question presentation depended on the responses to the previous questions.]

Why do you think the [thinner/fatter] man is more biased, less knowledgeable, or less trustworthy? (Feel free to mark multiple reasons.)

- His size is his own fault.
- He is intimidating or frightening.
- He is disgusting.
- He is unintelligent.
- He lacks expertise.
- He is biased because of his experiences.
- He is biased because of his nature.
- He is likely to disagree with me.
- I have not met very many people like him.
- Other reason: _____

Why do you think readers are biased against the [thinner/fatter] man? (Feel free to mark multiple reasons.)

- They blame him for his size.
- They fear him.
- They are disgusted by him.
- They find him unattractive.
- They believe that he is unintelligent.
- They believe that he lacks expertise.
- They believe that he is biased.
- They believe that he is likely to disagree with them.
- They have not met very many people like him.
- Other reason: _____

(This page contains followup questions based on your previous responses. If you don't see any, don't worry. Just click the arrow to move on.)

Thank you for helping us explain the outcome of this experiment! Your ideas will be very helpful.

Now we just want some basic information about you.

Gender [Open-ended]

Race and/or Ethnicity [Open-ended]

Height (please specify units) [Open-ended]

Weight (please specify units) [Open-ended]

How would you describe your body's size?

[Very thin.....Visibly overweight]

How do you think others would describe your body's size?

[Very thin.....Visibly overweight]

What is the highest level of formal education you have achieved so far?

[Have not reached high school / Some high school / secondary school /
High school / secondary school diploma / Some college / university / Associate's degree
Bachelor's degree / Some graduate school / Graduate degree (e.g., M.A., Ph.D.)]

Which of these describes your political views?

[Participants were permitted to select multiple options.]

Very conservative

Conservative

Moderate, but leaning conservative

Moderate

Moderate, but leaning liberal

Liberal

Very liberal

Other: _____

If you had to categorize yourself as either "more liberal" or "more conservative," which would you pick?

["More liberal" / "More conservative"]

Please feel free to share any other relevant information about yourself.

[Open-ended]

Thank you for participating in this study!

The purpose of this study is to see how the author's visible characteristics affect how an article is perceived. You have already seen the two different author photographs we used. There were also three separate articles -- one about prejudice against fat people, one about prejudice against Middle Eastern people, and one about the environment. We suspect that people's perceptions of articles about prejudice might depend on whether they think the author is personally affected by that type of prejudice.

If you have any questions about this study, please contact Sara Burke at seburke@umich.edu.

Please feel free to share any comments you have about this survey.

[Open-ended]

Appendix C: Author Images and Article Formatting

Note. These images represent the six conditions. To preserve space, only the top of each article is shown, and the images are shrunk so they all fit on the page. All color has been removed.

OP-ED

Overweight People face Unjust Prejudice

July 16, 2010



Alex Shore
Columnist

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Despite widespread agreement that many forms of prejudice are wrong, our culture continues to stigmatize those who appear relatively heavy. This blatant bias is unacceptable.

"Weight-based prejudice is widespread," says sociology professor Catherine Lawrence, "and many people don't even try to hide it." She explains that health information about obesity is distorted as an excuse to justify attacking overweight people personally. According to recent studies, even doctors, who should take a more balanced approach to judgments about personal health, frequently show less respect for overweight patients, even spending less time with them and giving less advice than they give to thin people.

Many assume that anyone can be thin if they just try hard enough.

OP-ED

Middle Eastern People face Unjust Prejudice

July 16, 2010



Alex Shore
Columnist

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"Prejudice against Middle Easterners is widespread," says sociology professor Catherine Lawrence, "and many people don't even try to hide it." She explains that fears of religious extremism and news of political instability in the Middle East are distorted as an excuse to justify attacking all Middle Eastern Americans. According to a recent evaluation, even some civil rights activists, who should take a more balanced approach to judgments about race, show less respect for Middle Easterners than they do for others.

Many assume that anyone can assimilate completely if they just try

OP-ED

Our Environment faces Unjust Exploitation

July 16, 2010



Alex Shore
Columnist

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Despite widespread agreement that the environment is worth protecting, our culture continues to disregard environmental concerns when making economic decisions. This blatant lack of foresight is unacceptable.

"Ignorance about the environment is widespread," says ecologist Catherine Lawrence, "and many businesses don't even try to hide it." She explains that information about new "green" strategies is distorted as an excuse to ignore simple principles like reducing waste. According to recent studies, even green energy companies, which should take a more balanced approach to judgments about the environment, frequently forget these basic principles. Downplaying any one aspect of sustainability hurts other efforts by sending a

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Many assume that it's impossible to pay attention to all the