

“Expert in the language of fear”:  
Stigmatized targets’ perception of others’ emotion-specific prejudice

by

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## ABSTRACT

This project uses a functional approach to understand how members of stigmatized groups perceive emotional expressions on others' faces. The project starts from the premise that different groups are seen to pose different threats to others, and thus different groups face prejudices colored by different, specific negative emotions. For example, prejudice toward Black men is driven largely by fear, whereas prejudice toward obese people is driven largely by disgust. Members of these groups may thus come to be "expert" in perceiving fear or disgust in others' faces, depending on the specific emotional prejudices others feel toward their group. Alternatively, members of these groups may be biased to over- or under-perceive these emotional expressions on others' faces. I used a functional approach to predict that, if a Black man believes that seeing others' fear expressions will be useful to him, he will tend to overperceive fear on others' faces, whereas if an obese man believes that seeing others' disgust expressions will be useful to him, he will tend to overperceive disgust on others' faces. If, however, it is not considered useful to perceive these prejudicial emotions on others' faces, Black men and obese people will tend to underperceive these emotional expressions. This study recruited Black men, overweight men, and a group of comparison men. All participants completed an emotion detection task in which they rated faces on whether they expressed fear, disgust, or no emotion. Participants were randomly assigned to complete this emotion detection task either before or after a questionnaire designed to make salient, as well as to measure, participants' beliefs about others' prejudices and stereotypes of their group. Finally, participants completed a set of measures tapping predicted moderator variables. Results suggested that a) Black men tend to be less sensitive perceivers of both fear and disgust

on others' faces than are other groups, unless prejudice is salient, and b) variables that would guide the functionality of perceiving others' prejudicial emotional expressions (e.g., belief that prejudice toward one's group is justified, belief that group status differences are legitimate, belief that one can manage stigmatizing interactions, stigma consciousness, and emotion-specific metastereotypes of one's group) do predict differences among Black men in perceiving these emotions on others' faces. Most results for overweight participants were null findings. The results' implications for the psychology of detecting prejudice, and emotional expressions more broadly, are discussed.

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As a young Black man in Chicago, Brent Staples became an “expert in the language of fear,” noting that passersby huddled closer to each other, avoided eye contact with him, and even ran away as he walked down the nighttime street (Staples, 1995). In contrast, an unnamed overweight man (quoted in Lewis, Kravitz, Janssen, & Powell, 2011) says: “There’s still only three stores for fat people in Melbourne. That says to me ‘you’re disgusting, you’re fat, it’s all your fault’.” Although like Staples this man perceived himself to be the target of prejudice, his words suggest that he became an expert not in the language of fear, but of *disgust*.

What, exactly, would it look like for members of particular stigmatized groups to become “experts” at detecting others’ prejudice? Would members of different groups become, as the quotes above suggest, specially attuned to perceive expressions of not just any negative emotion but the specific emotions directed toward their group? Would Black men and overweight people become especially accurate at detecting another’s fear or disgust, respectively, even when these emotions are only subtly expressed? Might members of these groups show biases to either over- or under-perceive these specific emotions; that is, would they tend to see fear or disgust even on faces that are not, in fact, expressing these emotions? Or would they err on the side of under-perceiving these emotions, only detecting the most obvious expressions of fear or disgust?

I propose a functional approach to answer these questions. I build from a threat- and emotion-specific framework for understanding stigma, which argues that targets of stigma recognize that the prejudices they face are threat- and emotion-specific and that, consequently, they perceive and try to manage others’ prejudices in specific ways. This approach rests, fundamentally, on the simple premise that targets’ attunement to

particular emotional expressions will reflect the functionality of perceiving those emotional expressions; that is, the *usefulness* of perceiving that someone is afraid of or disgusted by them will guide how members of stigmatized groups detect those emotions in others.

Below, I discuss the threat-specific, affordance-based approach to prejudice and to understanding targets' experience of threat-specific stigmatization, including the importance of detecting others' emotional expressions. Next, I describe the general signal detection paradigm and how it helps to answer this project's central questions. I then propose a set of variables likely to increase or decrease bias at detecting facial expressions, and outline my specific predictions.

### **An affordance-based perspective**

This work builds in large part on work exploring how people *manage the affordances* of social life (Gibson, 1979; Johnson & Freeman, 2010; McArthur & Baron, 1983; Neuberg, Kenrick, & Schaller, 2010; Zebrowitz & Collins, 1997; Zebrowitz & Monteparte, 2006). That is, people pose threats and opportunities to each other: We help, hurt, nurture, overthrow, undercut, infect, coddle, assist, seduce, and protect each other, and we do so discriminately. Because we are a highly interdependent species, our psychology is in many ways designed to assess and predict the threats and opportunities others afford us, to facilitate our own social – and ultimately, reproductive – success (Buss, 2011).

Crucially, affordances are not perceived as static qualities of others. Rather, they emerge dynamically from the way our own goals and abilities intersect with others' goals and abilities: I may perceive my brother to afford me protection – especially when I am

concerned for my own safety – whereas you might perceive him to afford harm to you. This dynamism means that affordances vary across perceivers, targets, and situations, and we are thus flexibly attuned to perceiving both the threats and opportunities specific others pose to us (e.g., Becker, Kenrick, Neuberg, Blackwell, & Smith, 2005; Kurzban & Leary, 2001; Neel, Becker, Neuberg, & Kenrick, 2012; Neuberg et al., 2010), as well as the threats and opportunities we may pose to others (Cottrell, 2012; Neel, Neufeld, & Neuberg, in press; Neuberg & Cottrell, 2008).

The affordance-based perspective reframes how we answer many important questions in social psychology, including how people perceive others (Johnson & Freeman, 2010; Zebrowitz & Collins, 1997), how alliances form within groups (Cottrell, Neuberg, & Li, 2007), and how people manage others' impressions of them (Neuberg & Cottrell, 2008). As discussed below, the origin and course of prejudice, too, look different when observed through the lens of affordance management.

### **An affordance-based perspective on prejudice**

Building from an affordance-based perspective, the sociofunctional approach to prejudice (Cottrell & Neuberg, 2005; Neuberg, Smith, & Asher, 2000) challenges the idea that prejudice is monolithic by describing, instead, qualitatively different “syndromes” of prejudice (Schaller & Neuberg, 2012).<sup>1</sup> These different syndromes become activated when specific groups are perceived to pose one or more specific

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<sup>1</sup> Research examining being a target of “prejudice” vs. being “stigmatized” is melding as it appears that the differences between these literatures do not reflect distinct underlying psychologies but simply different research traditions and labels (Phelan, Link, & Dovidio, 2008). For this reason, throughout this paper I refer interchangeably to “experiencing stigma” and “being a target of prejudice.”



threats. For example, prejudice toward obese people originates in part from the heuristic perception that obese people may spread disease (Park, Schaller, & Crandall, 2007). This perception produces disgust, which in turn motivates specific behaviors, such as avoiding restrooms used by obese people, or washing after shaking hands with them, to minimize the threat of contamination. This particular suite of perceptions, emotions, and behaviors evolved to manage health threats in general and has been co-opted and elaborated for the social realm (Schaller, 2011). This suite does not, however, necessarily manage perceived threats to one's safety, property, reciprocity, etc.; these other threats each have their own accompanying perceptions, emotions, and behaviors designed, respectively, to keep one safe, protect one's belongings, and maintain equitable social exchange networks. What has traditionally been known as "prejudice" thus encompasses qualitatively distinct systems for managing the different kinds of threats people can pose to each other.

### **Which groups are seen to pose what threats?**

The stereotype that a group poses a particular threat emerges from an interplay of evolved mechanisms with the current cultural environment. For example, perceiving that a target poses a violence threat likely emerges from an evolved sensitivity to particular, evolutionarily stable cues—such as outgroup maleness (Navarrete, MacDonald, Molina, & Sidanius, 2010), large physical size (Fessler, Holbrook, & Snyder, 2012), and rapid approach (Miller, Maner, & Becker, 2010)—in combination with mechanisms for learning who is likely to pose a threat (e.g., either indirectly, as through stereotypes, or directly, through personal experience: Navarrete, Olsson, Ho, Mendes, Thomsen, & Sidanius, 2009; Olsson, Ebert, Banaji, & Phelps, 2005). Likewise, disease threats are in

large part cued by evolutionarily stable signs that a person may bear infectious pathogens. One class of such cues encompasses morphological signs that the body has experienced infection (e.g., Park, Faulkner & Schaller, 2003; Schaller, 2011). Other cues may signal that the person carries foreign (novel) pathogens and/or may not know the local norms for managing infection (Faulkner, Schaller, Park, & Duncan, 2004). Given the potential fitness costs of putting oneself in contact with diseases or of failing to manage or avoid violence, both the disease and violence threat detection systems should be calibrated so as to risk erring on the side of overperceiving rather than erring on the side of underperceiving the presence of these threats; misperceiving as threatening individuals who are not, in fact, infectious or violent is generally preferable to misperceiving as safe individuals who are, in fact, dangerous; Haselton & Nettle, 2006; Neuberg, Kenrick, & Schaller, 2011). Thus, the categories of apparently threatening targets are overinclusive, leading people to perceive as threatening some people who do not, in fact, pose such threats (e.g., seeing as diseased those with non-infectious facial birthmarks, Ryan, Oaten, Stevenson, & Case, in press).

### **Who feels vulnerable to these groups' perceived threats?**

As predicted by an affordance-based approach, not all people will be equally prejudiced toward different groups. Indeed, some groups may feel or be more vulnerable to threats of violence or disease than others, and greater vulnerability – whether measured or manipulated – appears to lead to greater prejudice toward groups stereotyped to pose those threats. For example, when in the dark, people who believe the world is a dangerous place stereotype Black men as dangerous to a greater extent (Schaller, Park, & Mueller, 2003); people who are temporarily concerned about disease more readily

associate obesity with disease (Park et al., 2007); and incidental disgust increases prejudice toward gay men (Dasgupta, Desteno, Williams, & Huntsinger, 2009; Inbar, Pizarro, & Bloom, 2012). Likewise, women, who are typically physically weaker than men, may be more vulnerable to violence threats in general, and sexual assault threats in particular, and thus show greater fear of outgroup men than do men (Navarrete et al., 2010). And because men perceive unwanted sexual interest from gay men, whereas women do not, men tend to be more prejudiced toward gay men than are women (Pirlott & Neuberg, in press).

### **Linking perceiver prejudices to target outcomes: Detecting prejudicial emotions**

To better manage their own outcomes, people who are often targets of threat-based prejudice would benefit from being prepared to respond to such prejudices. Because threat-based prejudices differ in their emotional content, and perhaps emotional expressions as well, different target groups may come to be attuned to perceiving specific emotional expressions.

Emotional expressions communicate the affordances others see you to pose. Imagine someone looks at you with disgust. What does this communicate to you? To what would you attribute that emotion? Perhaps you would wonder if you had some crumbs on your face left over from lunch. Or perhaps you would assume that the person finds what you just said to be morally repugnant or socially unacceptable. In contrast, if someone were to look at you fearfully, you would probably have a very different set of intuitions and attributions. This person thinks that you could harm them – even that you were *intent* on harming them. Emotional expressions may thus communicate perceived affordances – when I look afraid of or disgusted by you (or happy about you, proud of

you, envious of you, etc.), I am telling you what threats and opportunities I think you pose to me. Along these lines, Darwin discussed the communicative nature of different emotional expressions across species (1872): “With social animals, the power of intercommunication between the members of the same community,—and with other species, between the opposite sexes, as well as between the young and the old,—is of the highest importance to them” (60). Some contemporary empirical work supports this interpretation of emotional expressions as affordance communicators as well. Emotions have social, and not simply intrapersonal, functions (Keltner, Haidt, & Shiota, 2006; Niedenthal & Brauer, 2012; Van Kleef, 2009). Matsumoto, Keltner, Shiota, O’Sullivan, and Frank (2008) argue that those functions include communicating information about the expresser’s relationship with the target and relationship with the environment, and thus expressions are designed to elicit responses from others. Indeed, the featural configurations of emotional expressions themselves may have evolved to be easily detected by others (Becker, Anderson, Mortensen, Neufeld, & Neel, 2011; Shariff & Tracy, 2011), which would facilitate accurate detection of how others perceive and respond to you when they express emotions to you. Below, I discuss what is known about the elicitors of fear and disgust, what people might infer when others are afraid of or disgusted by them, and how people might respond.

***Fear.*** People feel fear when they perceive a threat to their physical safety, motivating safety-seeking and escape from the threat and defense against attack. For example, one might feel fear when another person acts dominantly and aggressively to maintain control and status. Fear expressions appear to serve especially important functions within status hierarchies. Henrich and Gil-White (2001) argue that experiencing

fear “estimates the cost of challenging superiors” (p. 168), and thus the fear expression conveys that the expresser expects the other person to act dominantly. Being feared, in turn, confers dominance, raising one’s status and access to resources (Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013; Henrich, & Gil-White, 2001). Thus, when people are afraid of you, their expressions communicate an implicit power dynamic in which you are seen as seeking dominance over them and as capable of harming others (see also Ohman, 1986). Indeed, fear expressions themselves may have evolved not only as general signals to alert others to possible threat, but when directed at a possible aggressor, to attempt appeasement (Shariff & Tracy, 2011). The morphology of the fear expression reflects this latter function, and may be designed to signal lower power and submission in an attempt to appease the target of the expression and thereby reduce aggression from him or her (Marsh, Ambady, & Kleck, 2005).

### **Disgust**

Disgust expressions, in contrast, signal a very different set of perceived affordances. Seeing that someone is disgusted by you is a sign that you are perceived in some way as “dirty” and as a potential contaminant to others’ health or morality (Oaten, Stevenson, & Case, 2009; Rozin, Haidt, & McCauley, 2008; Tybur, Lieberman, & Griskevicius, 2009; Tybur, Lieberman, Kurzban, & DeScioli, 2013). Shariff and Tracy (2011) hypothesize that the disgust expression serves to warn others about aversive foods, and distasteful ideas and behaviors. Another’s disgust expression may also communicate that the expresser sees you as *lower* in status or power: Many creatures relegate individuals bearing sickness cues to the bottom of a hierarchy (e.g., Wilson,

1975), including chimpanzees (e.g., Van Lawick-Goodall, 1971), and especially if disgust is accompanied by contempt (e.g., Hutcherson & Gross, 2011).

### **Stigmatized groups perceive threat- and emotion-specific prejudice**

The current project focuses on two target groups—Black men, stereotyped to be violent and targeted with fear-based prejudice (Duncan, 1976; Eberhardt, Goff, Purdie, & Davies, 2004; Navarrete, McDonald, Molina, & Sidanius, 2010; Schaller et al., 2003; Trawalter, Todd, Baird, & Richeson, 2008), and obese people, stereotyped in part to pose disease threats and targeted with disgust-based prejudice (Park et al., 2007; Vartanian, 2010). Members of these groups believe prejudice is threat/emotion specific (Neel et al., 2013), and these beliefs may mediate the effects of threat-specific prejudice on their own outcomes – as when, for example, obese people perceive that others are disgusted by, but not afraid of, them, and that this belief motivates subsequent threat-management behaviors. Framed another way, I propose that targets’ “meta-stereotypes” – that is, targets’ beliefs about how their group is stereotyped by others (Vorauer, Main, & O’Connell, 1998) – are threat- and emotion-specific.<sup>2</sup>

There is some evidence for this. In parallel with findings that Blacks are stereotyped as dangerous, a representative survey of Black Americans from the mid-1990’s found “dangerousness” to be the most widely-held metastereotype of Blacks – more common than metastereotypes of lack of intelligence (Sigelman & Tuch, 1997).

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<sup>2</sup> Prejudices toward both obese people and Black men may include anger and contempt, and thus members of both groups may become attuned to these expressions in addition to disgust or fear, respectively. However, examining prejudicial emotions *different* across the two groups allows for stronger tests of my predictions, and so this investigation begins there. Follow-up research can examine prejudice-tinged emotional expressions common to both groups.

Likewise, some evidence suggests that targets of disease- and disgust-based prejudice also have threat-specific metastereotypes: Puhl, Moss-Racusin, Schwartz, and Brownell (2007) found that a substantial proportion of an overweight and obese sample mentioned “poor hygiene” as a common weight-based stereotype, and Smith and colleagues (2007) report that colostomy patients perceive disgust to be a significant component of anti-colostomy stigma. When explicitly asked about the threats their group is seen to pose to others, obese people say that others perceive that they are a health threat (but not a physical safety threat) and feel disgust (but not fear) toward them, whereas Black men perceive physical safety to be the threat their group is most seen to pose and that others fear them (Neel et al., in press). This specificity in threat-perception is reflected in experiences of discrimination as well. In one study (Kessler, Mickelson, & Williams, 1999, cited in Keyes, 2009), one of the most common discrimination experiences reported by Black Americans was having been hassled by police in their lifetime, with 19.3% reporting this (compared to 4.2% of White Americans), and fully 33.3% of Black Americans reported that “people act as if they are afraid of you” at least “sometime” or “very often” on a daily basis (compared to only 7.2 % of White Americans). Thus, targets appear to perceive both the prejudices and discrimination they face to be threat-specific.

Furthermore, targets of prejudice may expect fear- or disgust-based prejudice from some groups more than others. As discussed above, groups who tend to be or feel most vulnerable to specific threats are more prejudiced toward groups seen to pose those threats. Given this, Black men might expect fear from White women more than from

White men. Thus, targets may be especially attuned to signs of emotion-specific prejudice coming from particular others.

### **A functional approach to emotion detection**

If different stigmatized targets are subject to different forms of prejudice, one might expect all targets to become “super-attuned” to the specific emotions others often feel toward them. For example, one might expect Black men to be highly accurate at detecting fear expressions, whereas obese individuals would be highly accurate at detecting disgust expressions. However, given the nuances suggested by an affordance-based approach to emotion detection, this prediction is likely too simple. Instead, perceiving that someone is fearful of or disgusted by you should be guided by the extent to which that information *is useful to you in some way*. That is, targets’ tendency to detect others’ disgust or fear is likely to be specific to the extent that such specificity helps the target respond to or manage the effects of others’ prejudice. Below, I outline a signal detection approach to detecting others’ fear and disgust expressions, and then elaborate specific predictions for different targets’ attunement to these expressions.

As discussed above, members of stigmatized groups may frequently encounter others’ specific, threat-relevant expressions of disgust, fear, pity, or anger, etc. However, targets may confront situations in which it is not overwhelmingly clear whether or not someone is afraid of or disgusted by them: Is that person disgusted by me or by something else? Is she, in fact, not expressing disgust at all?

Signal Detection Theory (Macmillan & Creelman, 1990; Swets, Tanner, & Birdsall, 1961; Tanner & Swets, 1954) provides a framework for exploring such cases of perceptual ambiguity, and we can employ it to better understand how targets of prejudice



might attune their detection of particular emotional expressions. To the extent that a person tends to make accurate judgments about whether or not someone is expressing a particular emotion, she can be considered to have good *sensitivity* in detecting that emotional expression – in discriminating those times when that expression is present from when it is absent. However, there is also the possibility of certain kinds of systematic response biases: She may be biased towards perceiving a particular emotion even when it is, in fact, not expressed (“false alarms”), or she may be biased towards failing to perceive a particular emotion that is, in fact, expressed (“misses”); also see Error Management Theory (Haselton & Nettle, 2006). Note that sensitivity and response bias are separable cognitive phenomena: A person can exhibit an extreme response bias – for example, to *never* say that someone is disgusted by her – that will produce poor sensitivity if people are often disgusted by her, yet perfect sensitivity if people are indeed never disgusted by her.

### **Response biases in perceiving emotional expressions**

In perceiving others’ emotional expressions, targets may develop one of two possible response biases: a bias to minimize misses (e.g., erring on the side of detecting all instances of an expression, with the implication of “seeing” the expression when it isn’t there), or a bias to minimize false alarms (e.g., erring on the side of only detecting actual expressions of an emotion, with the implication of missing some actual expressions of the emotion). Which of these biases targets adopt depends on the relative costs of these two errors. For example, a smoke detector is calibrated to err on the side of responding as though there is fire, producing numerous annoying but not very costly false alarms, in order to minimize the quite costly mistake of failing to detect actual fire

(Nesse, 2001). Likewise, for circumstances in which it is less costly to see a threat-relevant emotional expression when there was none than to miss an actual threat-relevant emotional expression, targets should develop a bias to minimize misses: risking the perception of emotional expressions where they did not occur in the service of not missing actual emotional expressions when they do appear. Such a strategy could be favored if the target is motivated to change or respond to others' emotional expressions, if the costs of misapplying that strategy are low, and/or if the actual rate of true emotional expression is quite high (so the frequency of misperceiving an expression as present would be very low). For example, if a Black man is concerned that others fear him (e.g., he anticipates fear-based prejudice in an intergroup interaction), is motivated to change that perception, perceives that doing so is possible (e.g., he believes that if he smiles others will perceive him not to be a threat), and the costs of misapplying that strategy to people who are not in fact afraid of him are low (e.g., when smiling at people who are not afraid of him has no great cost), he will likely be biased to perceive that others are afraid of him (and consequently smile more often) than might be otherwise “necessary” to make the interaction go smoothly.

Targets may also adopt a bias to minimize misses when their stigmatized characteristics are particularly socially unacceptable and the discrimination they face severe, so that the cost of missing an actual threat-relevant expression — and thereby missing an opportunity to respond to it — outweighs the cost of misperceiving the expression when it is not there. Children who have been physically abused show such a bias not to miss expressions of anger, but not other negative emotions (Pollak, Cicchetti, Hornung, & Reed, 2000) – presumably because the costs for them of missing an adult's

anger (and thereby failing to adopt appeasement or escape behaviors, increasing the risk of physical injury) outweigh the costs of falsely perceiving anger when it did not appear (and thereby avoiding or appeasing someone who does not intend to hurt them).

In contrast, when targets perceive that they have little control over the course of their stigma (e.g., they cannot change their stigmatizing mark) or little ability to effectively manage others' responses to their stigma, they may adopt more conservative biases to minimize false alarms and, as a consequence, they may under-perceive actual expressions of an emotion. In these cases, the costs of falsely perceiving others to express the particular emotion are greater than the costs of missing an actual emotional expression. For example, a Black man who can do nothing to change his race, and believes that others will respond to him the same way regardless of how he presents himself, may be biased to under-perceive that others are afraid of him, because the benefit of perceiving that others are frightened of him may be low, and even psychologically costly (e.g., reminders of his stigmatized status may be demoralizing when he believes there is nothing he can do to change that).

**Primary hypotheses:**

H1. Black men will show a bias to over-perceive fear (identifying neutral faces as fearful).

H1ab. The bias described in H1 will be especially present a) when stereotypes/prejudices are made salient, and b) when the expresser is a woman.<sup>3</sup>

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<sup>3</sup> This should be especially true for non-Black expressers; the proposed study will use White expresser faces, and follow-up studies can examine this supplementary hypothesis directly by comparing Black men's detection of fear on Black vs. White faces.

H2. Obese men will show a bias to over-perceive disgust (identifying neutral faces as disgusted).

H2a. The bias described in H2 will be especially present a) when stereotypes/prejudices are made salient. I predict that this overperception of disgust will be similarly large for male and female faces, because both men and women are vulnerable to disease threats and likely to be prejudiced toward obese people.

### **Overview of hypothesized moderators of response bias in detecting prejudice-relevant emotional expressions**

As discussed above, the extent to which targets of prejudice over- or under-perceive others' prejudice-related expressions should depend on the extent to which they perceive that expressive information will be useful to them. Thus, a number of individual difference factors (including those mentioned above) may contribute to the psychological calculus of whether it is better to over- or under-perceive others' expressions, and moderate participants' response biases. First, to the extent that targets are *motivated to manage others' prejudice* (or that they hold beliefs contributing to this motivation), they should over-perceive fear or disgust on others' faces because perceiving this expression would be a first step in identifying and then managing others' prejudice. Second, to the extent that targets perceive the *costs of missing an actual expression to be high*, they should also show a bias to over-perceive fear or disgust, because this would minimize misses of the expression when it does appear. Third, to the extent that targets *believe stigma-tinged situations can be managed*, they should over-perceive fear or disgust on other's faces because this information will be useful to them in addressing the situation.

In contrast, to the extent that each of these factors is low – that is, targets are not motivated to manage others’ prejudice, they perceive the costs of missing an actual expression to be low, or they believe stigma-tinged situations cannot be managed, targets should be biased to under-perceive prejudice-relevant expressions on others’ faces.

**Secondary hypotheses:**

*The following factors will positively predict targets’ bias to over-perceive the specific emotional expression of prejudice toward their group:*

H3. Motivation to manage others’ prejudice and beliefs that contribute to this motivation:

H3a. Motivation to manage others' prejudice

H3b. Belief that stigma-tinged situations can be managed

H3c. Belief that others' prejudice can change

H3d. Belief that prejudice is unjust

H4. High perceived cost of missing an actual expression

H4a. Belief that the stigmatized condition/cue/group membership is socially unacceptable

H4b. Belief that discrimination is potentially severe

H5. Belief that stigma-tinged situations can be managed

**Method**

**Participants**

**Recruitment.** Participants were recruited through Amazon’s Mturk website, which allows researchers to pay online “workers” a small sum to participate in studies. I originally estimated that screening 3,000 participants would provide >150 overweight men and 150 black men in the final sample. As noted below, the number of Black men

participating in the pre-screening was below this estimate (instead of 5%, the percentage of Black men in the prescreen was < 2%), leading to a smaller final sample of Black men.

***Pre-screening.*** A pre-screening survey was opened to Mturk Workers from the United States who had at least an 85% acceptance rate for Mturk work, meaning that no more than 15% of the tasks participants had done on Mturk (which include studies) had been rejected for poor quality; setting some standard for acceptance rate helps to ensure that participants are paying attention to the study. This pre-screening included questions about the participant's sex, race, whether the person is very overweight for their height or not, weight and height, embedded among other questions. Eligible participants were immediately forwarded to the focal study.

**Participant compensation.** For participants in the pilot run of the study, the initial pre-screening survey paid 50 cents and the focal study paid a bonus of \$1.50. For participants in the primary run of the study, the initial pre-screening survey paid 70 cents and the focal study paid a bonus of \$1.50.

**Participant sample.**

***Participant selection.*** 213 people participated in a *pilot run* of the prescreening and focal study (all participants in the pilot's prescreening were forwarded to the focal study). For the *primary run* of the study, 3,238 people participated in the prescreening, and all participants who were African American men (but not overweight), or overweight men (but not African American) were forwarded on to the focal study. To create a comparison group (in addition to participants from the pilot study), the last 354 participants in the primary run were given the option to participate in the focal study as well as the pre-screening; those men who were not African American or overweight were

randomly assigned to either the African American or overweight versions of the study. Recruitment for the comparison group was started after the study had begun because initially I only planned to recruit Black or overweight men to the study, but decided partway through that a comparison group would be useful for testing hypotheses.

***Exclusion criteria.*** Twelve cases for which there was evidence that the participant had already completed the study (either by completing both the pilot and primary runs of the study – identified with Mturk ID - or by completing the study multiple times from the same IP address in quick succession) were removed from the dataset (in each instance, the participant’s second case was removed). I also calculated each participant’s standard deviation of responses in the emotion detection task; a standard deviation of 0 would show that a participant’s face judgments had no variability. However, no participant had a standard deviation of 0 (they ranged from .68 to 2.46), and thus all cases were retained for analyses. Finally, participants who were Native American were not included in the final sample (because all participants answered questions about prejudices toward and stereotypes of Native Americans).

***Final participant groups.***

***Black men.*** A total of 64 Black men (indicating “African/African American” in the pre-screening) participated. Because of the small number of Black men in the participant pool (< 2%), after the study had begun the criteria were changed so that Black men who are overweight could participate in the version of the study for Black men.<sup>4</sup> In

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<sup>4</sup> Including overweight Black men is a risk to the extent that a) their being overweight leads them to have a baseline psychology of perceiving emotions that is similar to other overweight men (e.g., overperceiving disgust), or that b) being an overweight Black man leads one to be subjected to qualitatively different prejudices and stereotypes than non-

addition, those overweight Black men who had already completed the pre-screening were sent an email invitation to participate in the main study, and 5 chose to do so, for a total of 14 overweight Black men in the sample. The mean age of all Black male participants was 27 years (SD = 7.6 years). Participants' Body Mass Index (BMI) was calculated from self-report height and weight. Black men's average BMI was 25.7 (SD = 6.5), putting them in the overweight range (between 25 and 29.9). The 14 overweight Black men were on average 26 years old (SD = 6.7 years) and had an average BMI of 35.7 (SD = 3.9), indicating that the majority of the overweight Black men are obese (> 30).

*Overweight men.* A total of 187 overweight men participated. The mean age of these participants was 33 years (SD = 10.6 years); 12 were Asian/Asian American, 8 were Latino/Hispanic, and 167 were Caucasian/White. Overweight men reported a mean BMI of 33.7 (SD = 6.4), indicating that a majority of participants in this group are obese (BMI > 30).

*Comparison group men.* A total of 138 men who were neither overweight nor African American formed the comparison group. The mean age of these participants was 31 years (SD = 11.7 years), and their average BMI was 24.7 (SD = 3.43), putting them just in the normal range (between 18 and 24.9). 11 were Asian/Asian American, 12 were Latino/Hispanic, 2 were Middle Eastern, 108 were Caucasian/White, and 5 were of another race/ethnicity.

## **Design Overview**

Participants rated their confidence in whether each face expressed fear, no emotion, or disgust. The faces expressed no emotion, to 10%, 20%, 30%, 40%, 50%, or

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overweight Black men (e.g., perhaps people are afraid of non-overweight Black men, but not obese Black men). These possibilities will be expanded upon in the Discussion.



60% disgust or fear. Participants completed these judgments either before or after a stereotype/prejudice salience manipulation designed to make salient their own beliefs about the specific emotions others feel toward their group (or for comparison group men, their own beliefs about the specific emotions others feel toward either obese people or African Americans). Thus, the study had a 3 (participant group [Black, overweight, comparison]; between-subjects) X 2 (prejudice salience [yes, no]; between-subjects) X 2 (expresser gender [male, female]; within-subjects) X 13 (expression percentage morph: 10% disgust, 20% disgust, etc. up to 60% disgust; 10% fear, 20% fear, etc. up to 60% fear; and neutral; within-subjects) design.

### **Materials and measures**

**Facial expression stimuli.** Expresser images were taken from the Radboud face database (Langner, Dotsch, Bijlstra, Wigboldus, Hawk, & van Knippenberg, 2010), which includes White posers expressing disgust, fear, and neutrality.

**Face morph stimuli creation.** Fantamorph 5.3.6. software was used to create target images that varied in the extent to which they expressed fear or disgust. For example, to create the disgust morphs for a particular expresser, the neutral and disgusted images for the expresser were loaded into the program. Dots were placed on corresponding facial areas of the two images. Using the program's morphing tools, I created faces that were 10% disgusted, 20% disgusted, etc., up to 90% disgusted. I then repeated the process using the expresser's neutral and fearful images to create fear morphs ranging from 10-90%. Disgust and fear face morphs were created for 10 male expressers and 10 female expressers.

***Expresser selection.*** Pre-ratings of the target faces were gathered a) to ensure that there was sufficient variability in the judgments of targets at lower level morphs (i.e., 30% disgust/fear), b) to examine whether the 50% or 60% morphs were sufficiently clear in expressing disgust and fear (and thus could serve as the most extreme morph in the main sample), and c) to provide ratings from which to choose the 6 targets for the main study that were sufficiently equivalent in clearly expressing disgust and fear at the different morph levels. A group of 8 research assistants (7 female, 1 male; 1 Asian American, 7 White; 1 overweight, 7 non-overweight) rated the 10%, 30%, 50%, and 60% morphs for the 20 expressers. For each image, the research assistants responded to the question, “Is this face expressing fear, no emotion, or disgust?” with response options of definitely fear (1), probably fear (2), possibly fear (3), no emotion (4), possibly disgust (5), probably disgust (6), or definitely disgust (7). The research assistants’ average ratings were used to choose 3 male and 3 female faces that were as close as possible in clearly expressing disgust and fear. Average emotion ratings of the final 6 faces in the dataset are presented in Table 1. All six expressers are shown in Figure 1, and a sample of all morphs for one expresser is presented in Figure 2.

Table 1. Pre-ratings of emotions on the faces of the 6 expressers selected for use in the Emotion Expression Task (1=definitely fear, 4=no emotion, 7=definitely disgust).

<b>Expresser Emotion</b>	<b>Percent morph</b>	<b>Rating</b>	
		<b>M</b>	<b>SD</b>
Fear	10%	3.94	0.22
	30%	3.10	0.72
	50%	1.82	0.73
	60%	1.27	0.65
Disgust	10%	4.13	0.25
	30%	5.25	1.08
	50%	6.58	0.63
	60%	6.67	0.61



Figure 1. Neutral images of the six expressers chosen for inclusion in Emotion Identification Task.

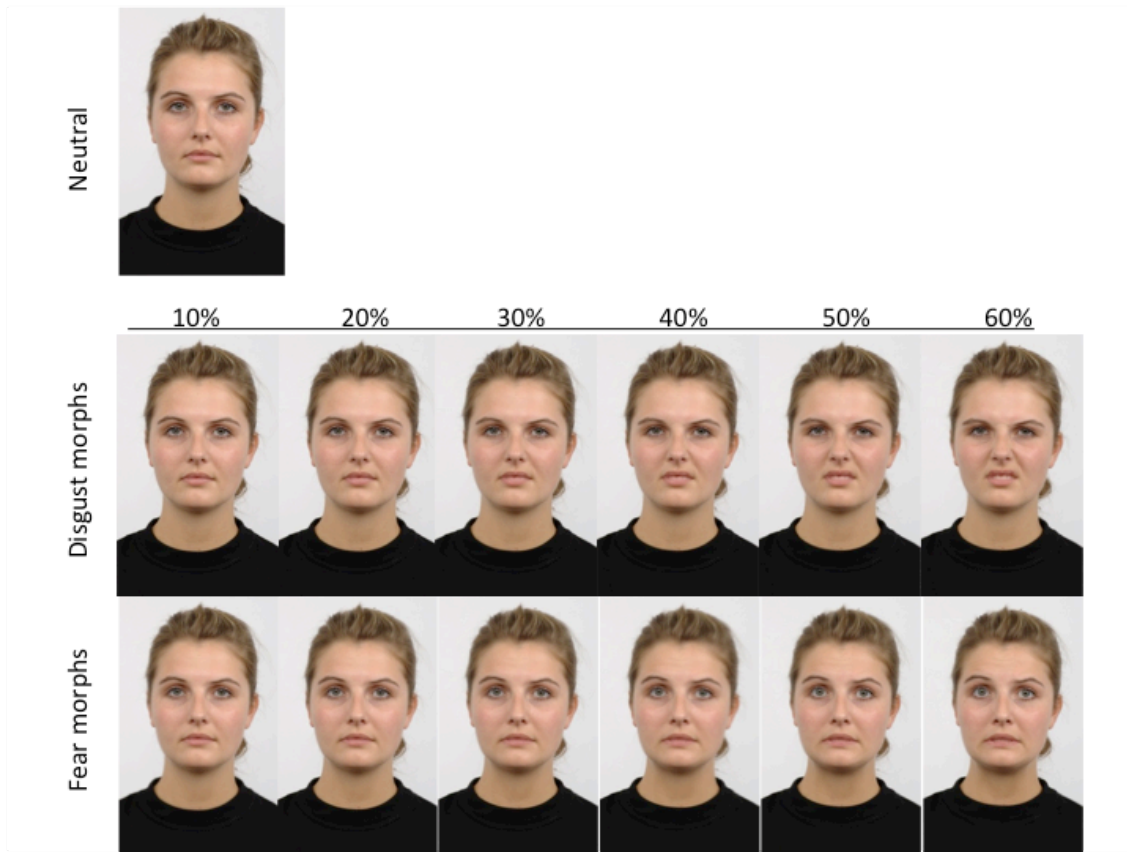


Figure 2. Full set of emotion detection task target images for one (of six) expressers.

Morphs ranging from 10-60% of fear or disgust were presented to participants, as well as the original neutral face.

**Stereotype/prejudice salience manipulation.** A series of items asked participants how people in general perceive two different groups (for all participants, the first group was Native Americans; for Black men or obese men, the second of these groups was their own: African Americans or obese people), including what specific emotions others tend to feel toward their group (adapted from Neel et al., in press). For example, “when most people think about obese people, in general, they feel [negative towards them/frightened of them/grossed out by them],” anchored at 1 = *not at all* and 9 = *extremely*. (See Appendix A for full set of items)

**Individual difference measures.** A series of measures tapped the proposed moderators (see Appendices B-D for all items). Measures that did not explicitly mention prejudice were administered as part of the pre-screening (specifically, items measuring: Beliefs that the world is just, Protestant Work Ethic, and Legitimizing Beliefs). Measures that mentioned prejudice were administered at the end of the focal study (all other measures).

A) Participants’ motivation to manage others’ prejudice toward their group. E.g., "It is important to me that others not be prejudiced toward me" (1 = *strongly disagree*, 7 = *strongly agree*).

B) Participants’ belief that stigma-tinged interactions can be managed. E.g., "When someone is prejudiced toward me, there are things that I can do to make the situation better for myself" (1 = *strongly disagree*, 7 = *strongly agree*).

C) Participants' belief that a person's prejudice can change (items adapted from Neel & Shapiro, 2012, to be specific to prejudice toward obese people and Black people). E.g., "If a person is prejudiced toward obese/Black people, there isn't much that can be done to change their feelings." (1 = *strongly disagree*, 6 = *strongly agree*).

D) Participants' belief that prejudice toward their group is just/unjust. E.g., "Prejudice toward [Black people/obese people] is wrong" (1 = *strongly disagree*, 7 = *strongly agree*). In addition, general beliefs that the world is just and other "legitimizing ideologies" were measured as part of the pre-screening (from O'Brien & Major, 2005).

E) The perceived social acceptability of prejudice toward the participant's group. E.g., "most people think it is OK hold prejudices toward [Black people/ obese people]" (1 = *strongly disagree*, 7 = *strongly agree*).

F) The perceived severity of discrimination toward oneself on the basis of race/weight. E.g., "If someone were to discriminate against me based on my [race/weight], that would have negative social consequences for me;" "It would be stressful for me to be a target of someone's prejudice based on my [race/weight]" (1 = *strongly disagree*, 7 = *strongly agree*).

**Demographic measures.** Basic demographic information was collected, including the participant's age, race, sex, political orientation, religious orientation, state and zip code, educational attainment, subjective SES, and yearly income. Participants also reported whether they used a smartphone, tablet, laptop, or desktop device to complete the study.

## **Procedure**

**Cover story.** The study was advertised as “Perceptions of People.” Participants were told that the researchers are interested in two aspects of how people perceive others: How most people perceive different groups in society, and how different emotions on faces are perceived.

**Emotional expression detection task.** For each trial in the emotion detection task, the target face was programmed to be presented for 2000 milliseconds. However, because of variability in the speed of loading the pictures, some participants saw the images for less than 2000 milliseconds, and several participants noted in the study comments section that they did not see some images at all. Thus, the actual presentation time of each face ranged from 0 to 2000 ms. Unfortunately, there is no record of how long each face was actually presented. Note that the noise introduced by the truncated presentation time should be randomly distributed across faces, but could be non-randomly distributed across participants (e.g., if due to a slower internet connection speed). If there is no reason to think, a priori, that overweight vs. Black vs. comparison men on Mturk would have different internet connection speeds, then slow-internet participants should be distributed equally across groups. However, even if there is no systematic relationship between participant group and internet speed, a group with a small N (e.g., the Black men prejudice-salience and no-salience conditions) may be more vulnerable to having their group mean distorted by a few participants who didn’t get to see the faces and responded in a systematic way.

For each face, participants responded to the question, “Is this face expressing fear, no emotion, or disgust?” with a response of definitely fear (1), probably fear (2), possibly fear (3), no emotion (4), possibly disgust (5), probably disgust (6), or definitely disgust



(7). These response options appeared with the face and remained on the screen until the participant advanced to the next question.

The order in which the faces appeared was randomized for each participant.

**Prejudice salience manipulation.** According to condition, participants completed the prejudice salience manipulation either before or after the emotional expression detection task. Before completing these items, participants saw ten groups listed on the screen and were told that they would be answering questions about two groups randomly chosen from the list. In fact, all participants completed the items in reference to Native Americans, and then in reference to obese people or African Americans, according to group membership (or for other participants not in these groups, random assignment).

**Individual differences, demographic measures, and debriefing.** Next, participants completed the individual difference measures not administered during the pre-screening. In keeping with the cover story, the questions were presented first in reference to Native Americans, and then in reference to either African Americans / Black people, or obese people, according to condition. Then, participants completed a few questions to assess suspicion (e.g., “What do you think of the study so far?” “What do you think the study is about?” and “Did anything about the study seem strange or unusual?”). No participants guessed the study hypotheses (that different groups would differently perceive fear or disgust), and no participants were excluded based on their responses to the suspicion probe items. Finally, participants were debriefed.

## Results

### Summary of dependent variables

Several different dependent variables can be produced from these data. First, for any group, *ratings of neutral faces* enable us to test for any bias to call neutral faces disgusted or fearful. Second, *ratings of disgusted/fearful morphs* provide evidence of participant's confidence that the target emotion was displayed (definitely fear, probably fear, possibly fear, etc.). Third, participant *sensitivity* (accuracy) and *response bias* in perceiving disgust or fear on a face can be computed by transforming responses into hits vs. misses for a particular emotion (Wickens, 2002; Macmillan & Creelman, 1991). For example, for disgusted faces, I counted any rating of 5 (possibly disgust) through 7 (definitely disgust) as a hit, whereas I counted any rating of 1 (definitely fear) through 4 (no emotion) as a miss. Rating a neutral face as disgusted – again, any rating of 5 (possibly disgust) through 7 (definitely disgust) – was counted as a false alarm, whereas any rating of 1 (definitely fear) through 4 (no emotion) was counted as a correct rejection of disgust. To calculate sensitivity ( $d'$ ), I subtracted the probit values of false alarms from the probit values of hits (probit is an acceptable substitute for Z-scores in these models; Stanislaw & Todorov, 1999). Greater  $d'$  values indicate greater sensitivity in identifying fear or disgust as present or absent. To calculate response bias ( $c$ ) I summed the probit values of the hits and false alarms for that type of face, and divided by 2. Positive values of  $c$  indicate a tendency to identify a face as disgusted/fearful whereas negative values of  $c$  indicate a tendency to identify a face as neutral. Unless otherwise indicated, values of  $c$  (bias to call a face disgusted/fearful) are calculated using hit rates across percentage morphs of a particular face type (e.g., all disgusted face morphs/all

fearful face morphs) and false alarms for all neutral faces (i.e., calling a neutral face disgusted/calling a neutral face fearful). Because values of 0 and 1 cannot be used in the formulas for  $d'$  and  $c$ , these were replaced with other values in accordance with accepted standards (1/2 of the distance between the otherwise lowest and highest possible values, or .084 and .916; Macmillan & Kaplan, 1985).

**Prediction 1: Black men are expected to show a bias to over-perceive fear on others' faces, whereas overweight men show a bias to over-perceive disgust (H1 & H2)**

For the following analyses, I examined only those participants for whom prejudice was not salient, to examine base rates of perceiving fear and disgust in faces.

I first examined the evidence for this prediction by running an ANOVA with group (Black men, overweight men, comparison men) as a between-subjects factor, on the ratings participants gave to neutral faces. There were no significant differences between the groups,  $F(2, 211) = 1.54, p = .22, \eta_p^2 = .01$ : Black men  $M = 4.00, SD = .18$ , overweight men  $M = 4.04, SD = .17$ , comparison men  $M = 4.07, SD = .22$ . Overall, then, very few neutral faces were rated as anything other than neutral, and there was no evidence that the groups differently tend to project fear or disgust onto neutral faces.

I next examined the evidence for this prediction using a 3 (group: Black men, overweight men, comparison men) X 2 (emotion: disgust, fear) Mixed ANOVA on scores of  $c$  (bias). If Black men overperceive fear and overweight men overperceive disgust, then Black men should show positive bias scores for fear judgments, and overweight men should show positive bias scores for disgust judgments, resulting in an interaction between group and emotion. The predicted interaction of group with emotion did not emerge,  $F(2, 211) = 1.47, p = .23, \eta_p^2 = .01$ . There was a main effect of emotion  $F(1,$

211) = 41.67,  $p < .001$ ,  $\eta_p^2 = .17$ , with stronger bias across groups to call fearful faces neutral ( $M = -.50$ ,  $SD = .22$ ) than to call disgusted faces neutral ( $M = -.35$ ,  $SD = .28$ ). There was also a main effect of group,  $F(2, 211) = 6.99$ ,  $p = .001$ ,  $\eta_p^2 = .06$ , with comparison men showing a significantly weaker bias to call fearful and disgusted faces neutral ( $M = -.36$ ,  $SD = .22$ ) than did either Black men ( $M = -.50$ ,  $SD = .19$ ;  $t(106) = 3.17$ ,  $p = .002$ ) or overweight men ( $M = -.44$ ,  $SD = .17$ ;  $t(176) = 2.73$ ,  $p = .007$ ). In other words, Black men and overweight men were more conservative in their bias to call a face fearful or disgusted than were comparison men. Black men and overweight men's biases did not differ,  $t(140) = 1.70$ ,  $p = .09$ .

Finally, I examined the evidence for this prediction by running 3 (group: Black men, overweight men, comparison men) X 6 (percent morph: 10, 20, 30, 40, 50, 60) Mixed ANOVAs on confidence in judging fearful faces, and then on confidence in judging disgusted faces (see Figures 3 and 4). If Black men overperceive fear on faces, or are more confident that a fearful face is fearful, then we should see that their ratings were *lower* than other groups in judging fearful faces (recall that fear ratings occupied the lower end of the response scale). Although the main effect of group was significant,  $F(2, 211) = 9.52$ ,  $p < .001$ ,  $\eta_p^2 = .08$ , Black men in fact gave *higher* ratings to fearful faces (indicating less confident ratings of fear;  $M = 3.18$ ,  $SD = .63$ ) than did overweight men ( $M = 2.86$ ,  $SD = .39$ ;  $t(140) = 3.57$ ,  $p = .007$ ) or comparison men ( $M = 2.80$ ,  $SD = .40$ ;  $t(106) = 3.31$ ,  $p = .002$ ). Overweight men's and comparison men's ratings did not differ from each other,  $t(176) = 1.07$ ,  $p = .29$ . In addition, a significant interaction of percent morph with group indicates that this main effect of group differed between the various percent morph levels,  $F(10, 1055) = 4.84$ ,  $p < .001$ ,  $\eta_p^2 = .04$ . Examining simple effects

tests shows that the pattern reflected in the main effect emerges for those morphs at 30% or greater ( $ps < .01$ ), but not at morphs of 10% or 20% ( $ps > .23$ ). For no percent morph did overweight men's ratings of fear differ from comparison men's ratings, all  $ps > .18$ . Thus, Black men were overall less confident than were overweight and comparison men in judging faces as fearful, and this pattern emerged for faces that were more obviously fearful, rather than very subtly expressing fear.

If overweight men are more confident that a disgusted face is disgusted, then we should see that their ratings were *higher* overall in judging disgust (because disgust ratings occupied the higher end of the response scale). Although the main effect of group was significant,  $F(2, 211) = 7.88, p = .001, \eta_p^2 = .07$ , overweight men in fact gave *lower* ratings to disgusted faces (indicating less confident ratings of disgust;  $M = 5.39, SD = .38$ ) than did comparison men ( $M = 5.52, SD = .42; t(176) = 2.38, p = .02$ ). Black men gave significantly lower ratings of disgust ( $M = 5.19, SD = .46$ ) than did both comparison men ( $t(106) = 3.69, p < .001$ ) and overweight men ( $t(140) = 2.34, p = .02$ ). In addition, a significant interaction of percent morph with group indicates that this main effect of group differed between the various percent morph levels,  $F(10, 1055) = 5.00, p < .001, \eta_p^2 = .05$ . Examining simple effects tests shows that Black men's ratings differed from comparison men's ratings for those morphs at 30% or greater ( $ps < .03$ ), but not at morphs of 10% or 20% ( $ps > .09$ ). Overweight men's ratings differed from comparison men's ratings for those morphs at 20% and 30% ( $ps < .03$ ), but not at other morph percentages ( $ps > .05$ ). Thus, as with their confidence that a face expressed fear, Black men were less confident that faces expressed disgust, and this was apparent for faces that were more extreme in their expressions. Overweight men, in contrast, were less

confident than comparison group men that a face was disgusted, but only when the disgust expression was relatively subtle.

In sum, there was no evidence to support Prediction 1. The ratings of neutral faces produced no evidence of group differences (this was the case across all analyses, and so neutral face ratings will be discussed no further). Analyses of bias (c) show that Black men and overweight men were less likely to call a face either fearful or disgusted than were comparison group men. And finally, compared to the comparison men, Black men gave less confident judgments of both fear and disgust, and overweight men gave less confident judgments of disgust (though not fear). This suggests that, at baseline, Black men may be less likely than other men to identify as fearful or disgusted a somewhat fearful or disgusted face, and overweight men may be less likely to call a disgusted face disgusted.

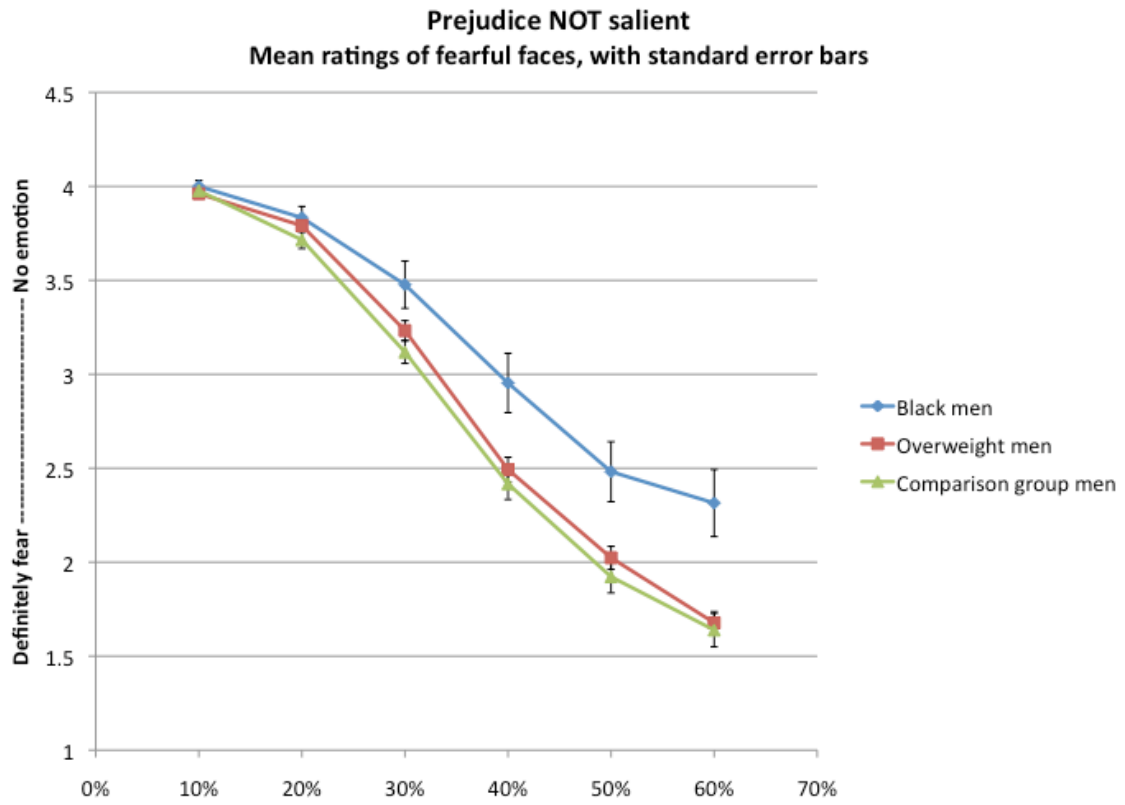


Figure 3. Mean ratings of fearful faces, with standard error bars, for participants in the no salience condition.

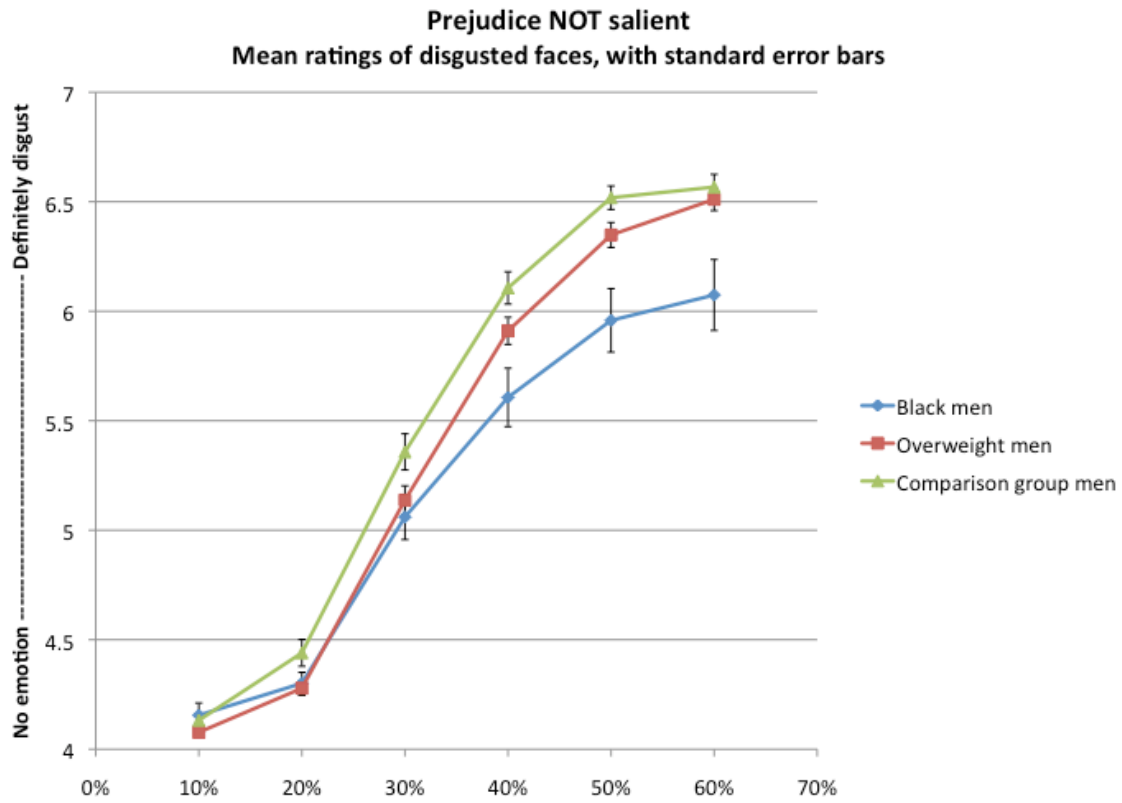


Figure 4. Mean ratings of disgusted faces, with standard error bars, for participants in the no salience condition.



**Prediction 2. Black men's bias to detect fear and overweight men's bias to detect disgust are especially pronounced when prejudice/stereotypes of their group are salient (H1a & H2a)**

To test this prediction, I conducted the same analyses described above (for c and for ratings of disgust/fear) on the responses of those participants for whom prejudice was salient.

I examined the evidence for this prediction using a 3 (group: Black men, overweight men, comparison men) X 2 (emotion: disgust, fear) Mixed ANOVA on scores of c (bias). As before, if Black men overperceive fear and overweight men overperceive disgust, then Black men should show positive bias scores for fear judgments, and overweight men should show positive bias scores for disgust judgments, resulting in an interaction between group and emotion. The predicted interaction of group with emotion did not emerge,  $F(2, 172) = 1.24, p = .29, \eta_p^2 = .01$ . There was a main effect of emotion  $F(1, 172) = 37.06, p < .001, \eta_p^2 = .18$ , with stronger bias across groups to call fearful faces neutral ( $M = -.49, SD = .24$ ) than to call disgusted faces neutral ( $M = -.36, SD = .26$ ). There was a marginally significant main effect of group,  $F(2, 172) = 2.52, p = .08, \eta_p^2 = .03$ , with comparison men showing a significantly weaker bias to call fearful and disgusted faces neutral ( $M = -.39, SD = .23$ ) than did overweight men ( $M = -.46, SD = .17; t(145) = 2.30, p = .02$ ), but not Black men ( $M = -.42, SD = .23; t(92) = .62, p = .54$ ). In other words, overweight men were more conservative in their identification of a face

as fearful or disgusted than were comparison men. Black men and overweight men's biases did not differ,  $t(107) = 1.07, p = .29$ .

As before, I also examined the evidence for this prediction by running 3 (group: Black men, overweight men, comparison men) X 6 (percent morph: 10, 20, 30, 40, 50, 60) Mixed ANOVAs on ratings given first to the fearful faces and then the disgusted faces (see Figures 5 and 6). If Black men overperceive fear on faces, or are more confident that a fearful face is fearful, that then we should see that their ratings were *lower* than other groups in judging fearful faces. Although the main effect of group was significant,  $F(2, 172) = 5.28, p = .001, \eta_p^2 = .06$ , Black men in fact gave *higher* ratings to fearful faces (indicating less confident ratings of fear;  $M = 3.07, SD = .64$ ) than did comparison men ( $M = 2.78, SD = .41; t(92) = 2.65, p = .01$ ). Overweight men also gave higher ratings to fearful faces than did comparison men ( $M = 2.95, SD = .37; t(145) = 2.75, p = .007$ ), and overweight men's and Black men's ratings did not differ from each other,  $t(145) = 1.18, p = .24$ . In addition, a significant interaction of percent morph with group indicates that this main effect of group differed between the various percent morph levels,  $F(10, 860) = 2.24, p = .014, \eta_p^2 = .03$ . Examining simple effects tests shows that the difference between comparison men and Black men is nonsignificant at 10% ( $p = .92$ ), marginal at 20% ( $p = .06$ ), and significant for those morphs at 30% or greater ( $ps < .04$ ). The difference between comparison men and overweight men is nonsignificant at 10%, 50%, or 60% ( $ps > .059$ ), and significant for those morphs between 20% and 40% ( $ps < .04$ ). Thus, as in the no salience condition, Black men were significantly less confident that a face was fearful than were comparison men, but only for faces with less subtle fear expressions. Overweight men for whom prejudice was salient were less

confident than comparison men that somewhat subtly fearful expressed fear, but this difference disappeared for more faces with more extreme fear expressions.

If overweight men overperceive disgust on faces, or are more confident that a disgusted face is disgusted, then we should see that their ratings were *higher* overall in judging disgusted faces. There was no main effect of group,  $F(2, 172) = 1.18, p = .31, \eta_p^2 = .01$ ; overweight men,  $M = 5.36, SD = .40$ ; comparison men,  $M = 5.46, SD = .40$ , Black men,  $M = 5.38, SD = .40$ . There was also no interaction of percent morph with group,  $F(10, 860) = 1.62, p = .10, \eta_p^2 = .02$ . Thus, the different groups did not rate disgust morphs differently, and there were no group differences across the percentages of disgust morphs.

In sum, there was no clear evidence to support Prediction 2. Instead, it appears that, when prejudice is salient, overweight men are somewhat more conservative than Black men or comparison men in calling a face fearful or disgusted, Black men and overweight men are less confident in their judgments of fearful faces than are comparison group men, and there were no group differences in confidence judging disgusted faces.

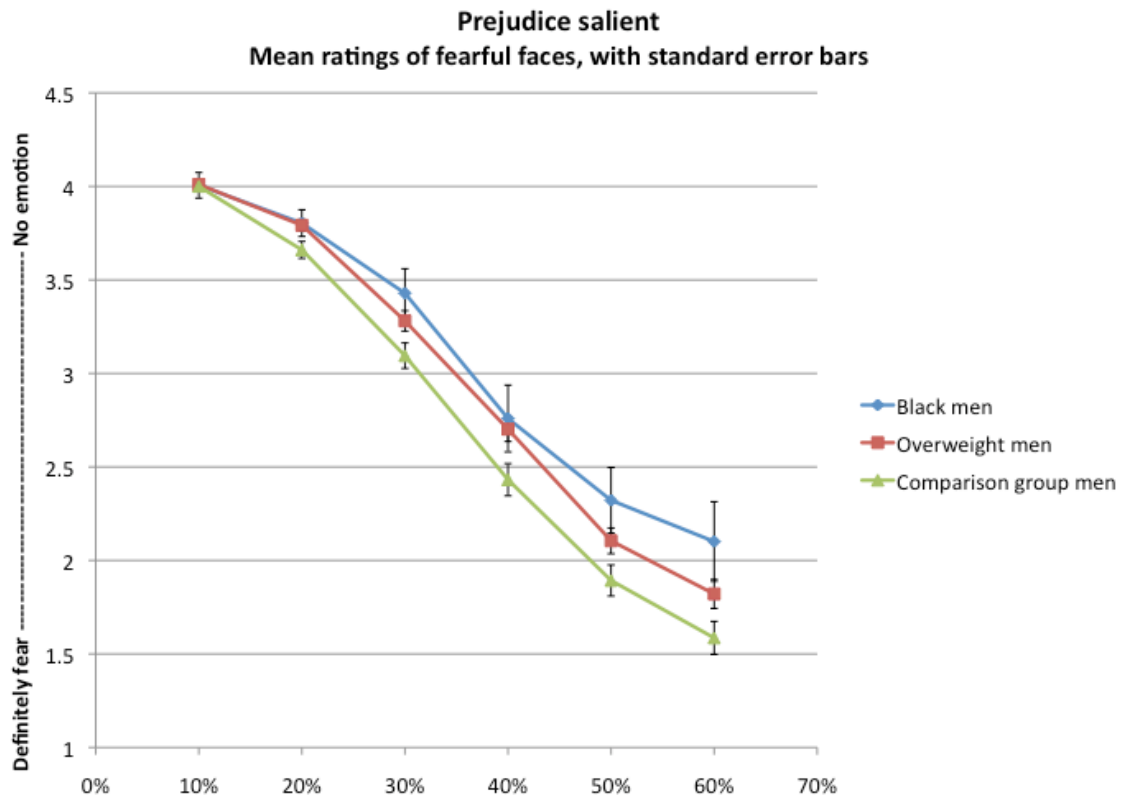


Figure 5. Mean ratings of fearful faces, with standard error bars, for participants in the prejudice salience condition.

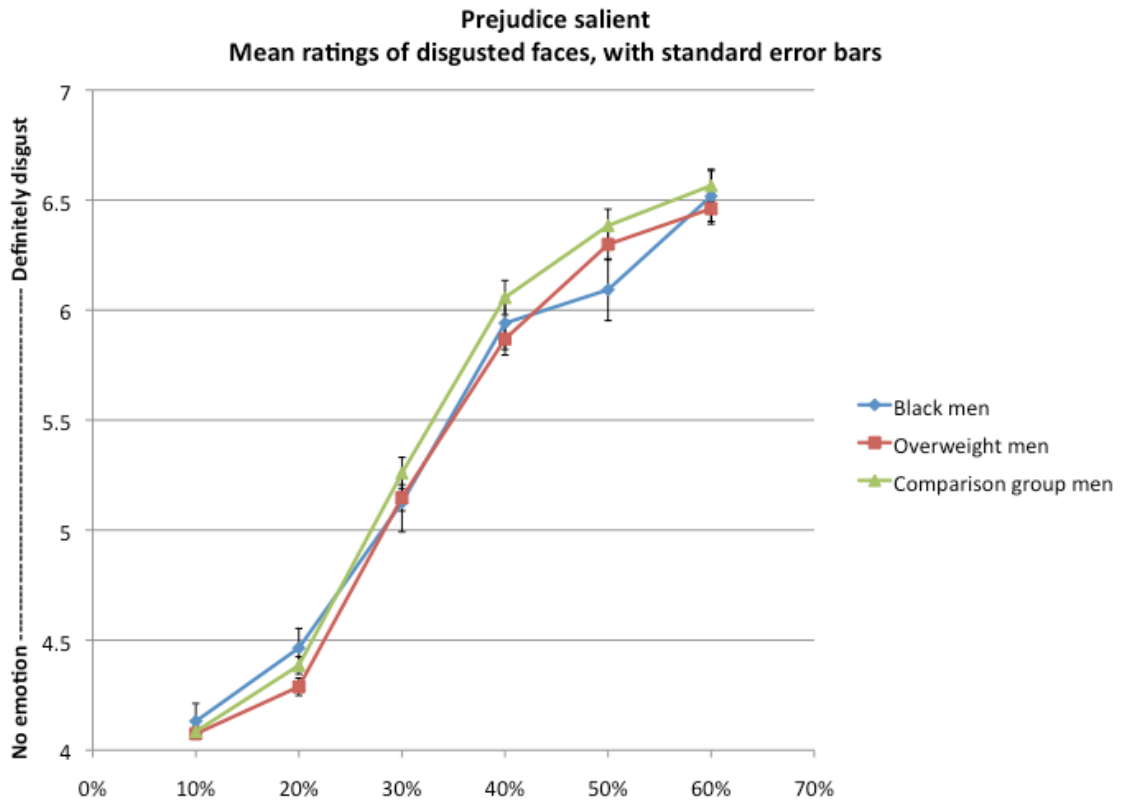


Figure 6. Mean ratings of disgusted faces, with standard error bars, for participants in the prejudice salience condition.

### **Follow-up to predictions 1 and 2: Prejudice salience effects by group**

The analyses above showed that Black and overweight men were if anything *under*perceiving fear or disgust on others' faces compared to comparison men. However, it is possible that for each group, the prejudice salience condition generated overperception of these emotions relative to their own baseline – that is, their tendencies to perceive fear and disgust when prejudice is not salient. To test this possibility, for both Black men and overweight men, I ran a series of ANOVAs with prejudice salience (salient, not salient) as a between-subjects condition, and looked at effects on confidence and bias for perceiving fear and disgust [there were no effects on sensitivity, all  $ps > .12$ ]. See Figures 7 – 10 for means and standard errors of face ratings organized by group.

For Black men, prejudice salience did not affect their confidence in perceiving fear (across face morphs),  $F < 1, p = .50$ . Furthermore, for no percentage morph was prejudice salience condition predictive of Black men's confidence that a face was fearful, all  $F_s < 1, ps > .42$ . Likewise, there was no effect of prejudice salience on Black men's bias to call a face fearful,  $F < 1, p = .46$ .

Although Black men tended toward greater confidence in judging disgusted faces when prejudice was salient, this difference was not significant,  $F(1, 62) = 2.86, p = .10, \eta_p^2 = .04$ . Examining each percentage morph separately, there was a significant effect of prejudice salience on Black men's confidence in judging faces that were 60% disgusted,  $F(1, 62) = 4.47, p = .04, \eta_p^2 = .07$ , but for no other percentage morph was this difference significant, all  $ps > .08$ . When prejudice was salient, Black men showed a somewhat less

conservative bias to call faces disgusted, but this difference was not significant,  $F(1, 62) = 2.52, p = .12, \eta_p^2 = .04$ .

Overweight men were non-significantly less confident in their face judgments when prejudice was salient than when it was not,  $F(1, 185) = 2.69, p = .10, \eta_p^2 = .01$ . Their confidence in judging 40% fearful faces was significantly lower when prejudice was salient,  $F(1, 185) = 4.86, p = .03, \eta_p^2 = .03$ ; for all other percentage morphs, the effect of prejudice salience was marginal (for 10%;  $F(1, 185) = 3.39, p = .07, \eta_p^2 = .02$ ) or nonsignificant (all other  $p$ s  $> .14$ ). Overweight men showed no effect of prejudice salience on bias to call a face fearful,  $F(1, 185) = 1.27, p = .26, \eta_p^2 = .01$ .

Overweight men showed no effect of prejudice salience on confidence that a face is disgusted,  $F < 1, p = .74$ , and for no percentage morph was there a significant effect of prejudice salience on confidence, all  $F$ s  $< 1, p$ s  $> .56$ . There was also no effect of prejudice salience on overweight men's bias to call a face disgusted,  $F < 1, p = .80$ .

Thus, there is little statistical evidence that the prejudice salience manipulation affected Black or overweight men's perception of fear or disgust on other's faces. It is worth noting that the mean differences for Black men are substantial and in the direction of greater over-perception when prejudice is salience. It will be important to test this possibility with a larger sample.

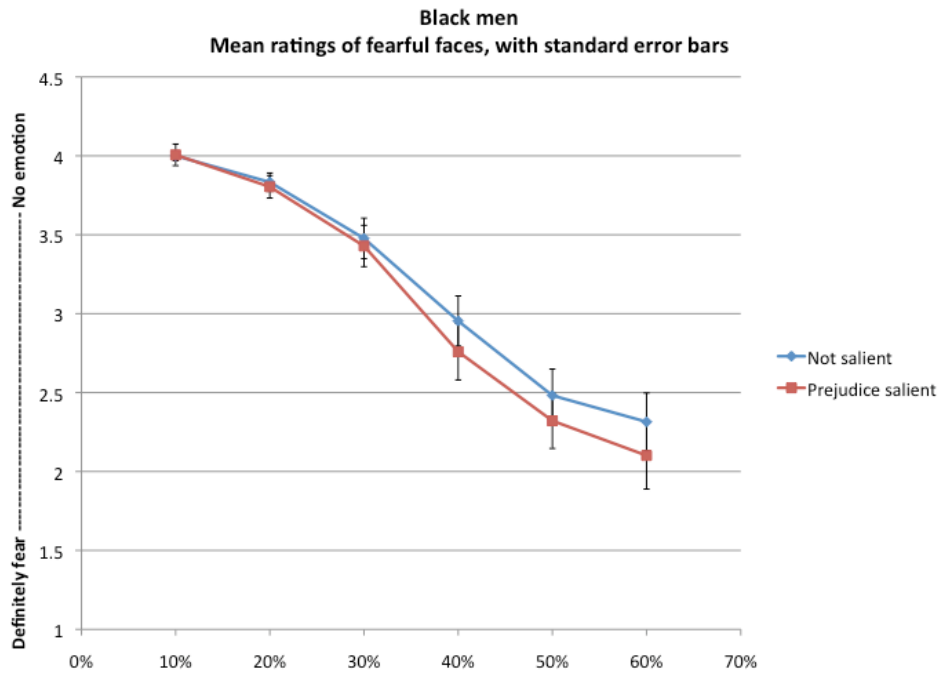


Figure 7. Mean ratings of fearful faces, with standard error bars, for Black men.





Figure 8. Mean ratings of fearful faces, with standard error bars, for overweight men.

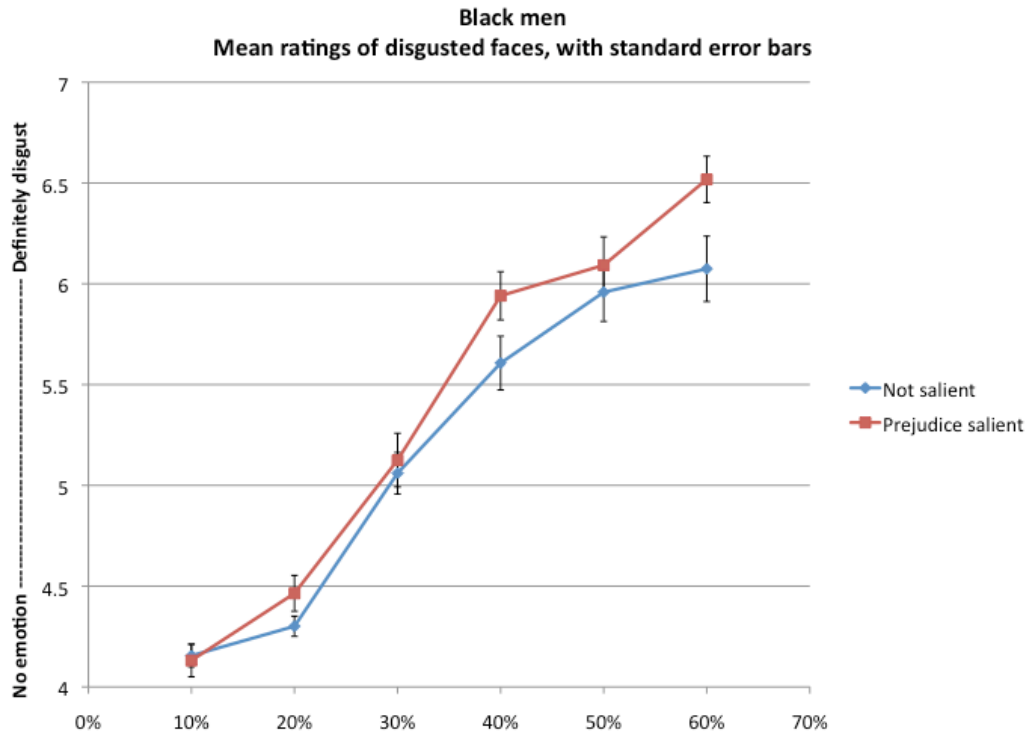


Figure 9. Mean ratings of disgusted faces, with standard error bars, for Black men.



Figure 10. Mean ratings of disgusted faces, with standard error bars, for overweight men

**Prediction 3. Black men are expected to perceive fear more often on female than male faces (H1b)**

To test whether Black men perceive fear more often on female than on male faces, as well as whether this was more pronounced in the prejudice salience condition, I conducted a 2 (target sex: male, female) X 2 (prejudice salience manipulation) Mixed ANOVA on the average judgments of all fearful faces. Contrary to predictions, Black men were less confident that female faces were fearful ( $M = 3.19, SD = .56$ ) than they were that male faces were fearful ( $M = 2.98, SD = .75$ ),  $F(1, 62) = 20.47, p < .001, \eta_p^2 = .25$ . There was no significant effect of prejudice salience condition or interaction of emotion with prejudice salience condition,  $F_s < 1$ .

Next, I conducted the same analyses using the dependent variable c (bias). Again, contrary to predictions, Black men were less likely to call a female face fearful ( $M = -.51, SD = .28$ ) than they were to call a male face fearful ( $M = -.39, SD = .28$ ),  $F(1, 62) = 10.72, p = .002, \eta_p^2 = .15$ .

For both dependent variables (confidence and bias), both overweight and comparison men also judged male faces to be more fearful than female faces,  $ps < .001$ .

Perhaps Black men are better able to *discriminate* whether fear is present in female faces than in male faces. To test this, I conducted the same ANOVA as above, with target sex and prejudice salience as factors, on the dependent variable d'. Higher scores indicate better performance distinguishing when fear is present from when it is absent. Black men showed no difference in d' for identifying fear on male ( $M = 1.09, SD = .80$ ) vs. female ( $M = 1.04, SD = .52$ ) faces,  $F < 1$ . In contrast, both comparison men

and overweight men showed greater discrimination for fear appearing on male faces (comparison men:  $M = 1.46$ ,  $SD = .47$ ; overweight men:  $M = 1.43$ ,  $SD = .44$ ) compared to female faces (comparison men:  $M = 1.37$ ,  $SD = .37$ ; overweight men:  $M = 1.29$ ,  $SD = .35$ ), comparison men,  $F(1, 136) = 4.89$ ,  $p = .03$ ,  $\eta_p^2 = .04$ , overweight men,  $F(1, 185) = 20.48$ ,  $p < .001$ ,  $\eta_p^2 = .10$ . Interestingly, Black men showed lower discrimination of fear in faces overall ( $M = 1.25$ ,  $SD = .64$ ) compared to either comparison men ( $M = 1.62$ ,  $SD = .36$ ;  $t(200) = 5.13$ ,  $p < .001$ ) or overweight men ( $M = 1.57$ ,  $SD = .34$ ;  $t(249) = 5.05$ ,  $p < .001$ ), interaction  $F(2, 383) = 17.96$ ,  $p < .001$ ,  $\eta_p^2 = .09$  [note that these  $d'$  values are higher than those reported separately for female and male targets because to calculate hit and false alarm rates, one substitutes different values for 0 and 1 when basing the rates on three judgments vs. six judgments]. Thus, Black men showed equivalent sensitivity for identifying fear in male and female faces, and less sensitivity overall than the other groups, whereas comparison and overweight men both were better at discriminating fear in men's faces than in women's faces.

#### **Prediction set 4: Moderator variables**

I predicted that a host of variables would moderate Black men's and overweight men's perception of fear/disgust expressions on others' faces. To examine each moderator, I conducted separate regressions for each participant group, first with only the moderator variable as a predictor, and second with the addition of prejudice salience (categorical: salient, not salient) and the interaction of prejudice salience and the moderator. For each moderator, I ran this set of regressions on three sets of dependent variables: 1) overall confidence that the target emotion was present (i.e., ratings of the facial expression as 1=definitely fear to 7=definitely disgust) across percentage morphs,

2)  $c$  (bias), and 3)  $d'$  (sensitivity). Here I will focus on those results that were interesting or significant; moderator variables that are not mentioned below did not produce any significant effects in predicting perception of disgust or fear on others' faces. The prejudice salience manipulation rarely interacted with the moderators; statistics for instances in which this interaction was significant are included below. See Table 2 for correlations of the moderator variables with the outcome variables, Table 3 for Black and overweight men's mean and standard deviation values on the moderator variables, and Table 4 for correlations among the moderator variables.

Table 2: Correlations of moderators with dependent variables

Group	Facial expression	Dependent variable	Participants'					Metastereotypes of physical disgust
			Belief that prejudice toward group is just	Belief that status differences are legitimate	Participants' belief that they can manage stigmatizing interactions	Stigma Consciousness	Metastereotypes of fear	
Black men	Fear	Confidence <sup>a</sup>	<b>-.43***</b>	<b>-.51***</b>	<b>.33**</b>	<b>.29*</b>	.12	-.20
		Sensitivity (d')	<b>-.36**</b>	<b>-.44***</b>	<b>.26*</b>	<b>.28*</b>	.06	-.22
		Bias (c)	-.19	-.21	<b>.29*</b>	.15	<b>.33**</b>	.13
	Disgust	Confidence	<b>-.34**</b>	<b>-.44***</b>	<b>.29*</b>	.14	.17	-.08
		Sensitivity (d')	<b>-.43***</b>	<b>-.35**</b>	.16	.12	.11	-.16
		Bias (c)	.09	.02	.12	.10	<b>.36**</b>	<b>.32*</b>
Overweight men	Fear	Confidence <sup>a</sup>	-.14	<b>-.24***</b>	.03	<b>.20**</b>	-.13	.09
		Sensitivity (d')	-.08	<b>-.15*</b>	-.01	.14	<b>-.15*</b>	.02
		Bias (c)	-.09	-.10	-.03	<b>.17*</b>	.05	.10
	Disgust	Confidence	<b>-.17*</b>	<b>-.26***</b>	.05	.13	<b>-.21**</b>	-.04
		Sensitivity (d')	-.02	<b>-.18*</b>	.04	.12	<b>-.15*</b>	.02
		Bias (c)	-.07	-.05	-.01	-.02	.03	-.03

<sup>a</sup> Values for confidence rating of fearful faces have been multiplied by -1 to facilitate comparison to confidence rating of disgusted faces.

Note: Significant correlations are bolded.

\* p < .05

\*\* p < .01

\*\*\* p < .001

	Black men			Overweight men			Difference between groups	
	Mean	Std. Deviation	n	Mean	Std. Deviation	n	t	p
	Belief that prejudice toward group is just	2.29	1.32	63	3.18	1.41	185	<b>4.42</b>
Belief that status differences are legitimate	3.24	1.56	64	3.35	1.29	187	-.50	.62
Participants' belief that they can manage stigmatizing interactions	4.30	1.12	63	4.78	1.15	186	<b>2.89</b>	.004
Stigma consciousness	5.13	1.23	63	5.35	1.03	185	1.28	.20
Metastereotypes of fear	4.61	2.60	63	2.23	1.50	186	<b>-6.88</b>	<.001
Metastereotypes of physical disgust	3.46	2.26	63	6.32	2.18	186	<b>8.90</b>	<.001
Note: Bold text indicates significant t-test								



Table 4: Correlations among moderator variables (for Black and overweight men only)

	Belief that prejudice toward group is just	Belief that status differences are legitimate	Participants' belief that they can manage stigmatizing interactions	Stigma consciousness	Metastereotypes of fear
Belief that prejudice toward group is just	1				
Belief that status differences are legitimate	0.22***	1			
Participants' belief that they can manage stigmatizing interactions	-0.06	0.00	1		
Stigma consciousness	-0.01	-0.25***	-0.04	1	
Metastereotypes of fear	-0.12	-0.13*	-0.05	0.04	1
Metastereotypes of physical disgust	0.30***	-0.02	0.13*	0.31***	0.12
N for all correlations is 248. * p < .05, ** p < .01, *** p < .001					

**Belief that prejudice toward one's group is justified.** I predicted that believing prejudice toward one's group is justified would negatively predict perception of prejudice-relevant emotional expressions. That is, if others' prejudice is justified, there may be less of a motivation to change that prejudice, and thus less of a motive to detect that prejudice.

*Black men.* For Black men, belief that prejudice toward one's group is justified predicted less overall confidence that a face is expressing fear,  $\beta = .43, t = 3.73, p < .001$  [note that because greater confidence that a face expresses fear is reflected in *lower* scores, the  $\beta$  value is positive]. It also predicted lesser sensitivity ( $d'$ ) in determining whether a face is fearful,  $\beta = -.36, t = -3.02, p = .004$ . Belief that prejudice toward one's group is justified did not predict Black men's bias to call a face fearful,  $\beta = -.19, t = -1.47, p = .15$ .

Belief that prejudice toward one's group is justified also predicted less overall confidence that a face expresses disgust,  $\beta = -.34, t = -2.86, p = .006$  [note that because greater confidence that a face expresses disgust is reflected in *higher* scores, the  $\beta$  value is negative]. This effect was moderated by prejudice salience,  $\beta = -.43, t = -3.65, p = .001$ . Simple slopes tests show that when prejudice was not salient, belief that prejudice is justified predicts confidence that a face is disgusted,  $\beta = -.58, t = -4.24, p < .001$ , whereas this was not the case when prejudice was salient,  $\beta = .30, t = 1.51, p = .14$ .

Belief that prejudice toward one's group is justified also predicted lesser sensitivity for Black men in determining whether a face is disgusted,  $\beta = -.43, t = -3.75, p < .001$ ; Black men who believe prejudice is justified were less sensitive at discriminating

whether or not a face expresses disgust. Prejudice salience condition did moderate this effect,  $\beta = -.32, t = -2.74, p = .008$ . Simple slopes tests show that when prejudice is not salient, belief that prejudice is justified does not predict sensitivity at discriminating whether or not a face expresses disgust,  $\beta = .03, t = .16, p = .87$ , whereas it does when prejudice is salient,  $\beta = -.64, t = -4.60, p < .001$ .

Belief that prejudice toward one's group is justified did not predict Black men's bias to call a face disgusted,  $\beta = .09, t = .66, p = .51$ . It did, however, interact with prejudice salience condition to predict bias to call a face disgusted,  $\beta = -.28, t = -2.12, p = .04$ . Simple slopes tests show that when prejudice is not salient, belief that prejudice is justified does not predict bias to call a face disgusted,  $\beta = -.03, t = -.22, p = .83$ , whereas it does when prejudice is salient,  $\beta = .54, t = 2.43, p = .02$ .

*Overweight men.* For overweight men, belief that prejudice toward one's group is justified marginally predicted less confidence that a face is expressing fear,  $\beta = .14, t = 1.91, p = .06$ . It did not predict either sensitivity in determining whether a face is fearful,  $\beta = -.08, t = -1.09, p = .28$ , or bias to call a face fearful,  $\beta = -.09, t = -1.17, p = .24$ .

Similarly, when predicting overweight men's perception of disgust, belief that prejudice toward one's group is justified predicted lower overall confidence that a face expresses disgust,  $\beta = -.17, t = -2.33, p = .02$ , but did not predict overweight men's sensitivity in determining whether a face is disgusted,  $\beta = -.02, t = -.32, p = .75$ , or bias to call a face disgusted,  $\beta = -.07, t = -.97, p = .34$ .

Thus, for Black men, belief that prejudice toward one's group is justified predicted both lesser confidence and lesser sensitivity in perceiving fear and disgust on others' faces, and it did not predict any bias to call a face fearful or disgusted. For

overweight men, greater belief that prejudice toward their group is justified weakly predicted lesser confidence in identifying disgust on others' faces, but did not otherwise produce any effects.

**Belief that group status differences are legitimate.** I predicted that greater beliefs that group status differences are legitimate would negatively predict perception of prejudice-relevant emotional expressions.

*Black men.* For Black men, belief that status differences are legitimate predicted less overall confidence that a face is expressing fear,  $\beta = .51, t = 4.62, p < .001$ , as well as lesser sensitivity in determining whether a face is fearful,  $\beta = -.44, t = -3.83, p < .001$ . Belief that status differences are legitimate did not predict any bias for Black men to call faces fearful,  $\beta = -.21, t = -1.68, p = .10$ .

For Black men, belief that status differences are legitimate also predicted less overall confidence that a face expresses disgust,  $\beta = -.44, t = -3.86, p < .001$ , and lesser sensitivity in determining whether a face is disgusted,  $\beta = -.35, t = -2.97, p = .004$ . Belief that status differences are legitimate did not predict Black men's bias to call a face disgusted,  $\beta = .02, t = .18, p = .86$ .

*Overweight men.* For overweight men, belief that status differences are legitimate predicted lesser confidence that a face is expressing fear,  $\beta = .24, t = 3.40, p < .001$ , as well as lesser sensitivity in determining whether a face is fearful,  $\beta = -.15, t = -2.12, p = .04$ . Belief that status differences are legitimate did not predict overweight men's bias to call a face fearful,  $\beta = -.10, t = -1.31, p = .19$ .

For overweight men, belief that status differences are legitimate also predicted less overall confidence that a face expresses disgust,  $\beta = -.26, t = -3.67, p < .001$ , as well

as lesser sensitivity in determining whether a face is disgusted,  $\beta = -.18$ ,  $t = -2.42$ ,  $p = .02$ . Belief that status differences are legitimate did not predict overweight men's bias to call a face disgusted,  $\beta = -.05$ ,  $t = -.66$ ,  $p = .51$ .

Thus, for both Black men and overweight men, greater belief that status differences are legitimate predicted lesser confidence and sensitivity in identifying fear and disgust on others' faces. Neither Black men's nor overweight men's belief that status differences are legitimate predicted a bias to see fear or disgust.

Could it be that these results are due to a *general* relationship between the belief that status differences are legitimate and the perception of fear and disgust on others' faces? In other words, does one need to be a member of a stigmatized group to show this relationship, or might anyone who believes status differences are legitimate perceive less fear and disgust on others' faces? To test this idea, I examined whether belief that status differences are legitimate correlated with confidence, sensitivity, and bias to see fear and disgust for the comparison group men.<sup>5</sup> Only one correlation was significant, and was small in magnitude: greater belief that status differences are legitimate predicted less confidence in perceiving disgust on others' faces,  $r = -.18$ ,  $p = .04$ ; all other  $r$ s  $< .16$ ,  $p$ s  $> .05$ . To formally test whether the relationship of this belief to the dependent variables was significantly greater among Black and overweight men than among comparison men, I conducted ANOVAs with group as a between-subjects variable, and belief that status differences are legitimate as a covariate, and specified for the model to include the interaction between these two variables. I conducted this analysis on the four variables

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<sup>5</sup> I also ran these same analyses for all other moderators discussed in this section. Only two other correlations out of 24 were significant, and both were small in magnitude ( $r$ s = .19), so are not discussed further.

that produced a significant relationship for Black and overweight men: confidence and sensitivity in perceiving fear, and confidence and sensitivity in perceiving disgust. The interaction of group with beliefs that status differences are legitimate was significant for both confidence ( $F(2, 383) = 7.37, p = .001, \eta_p^2 = .04$ ) and sensitivity ( $F(2, 383) = 5.45, p = .005, \eta_p^2 = .03$ ) in perceiving fear, indicating that for Black and obese men, belief that status differences are legitimate was significantly more predictive than for comparison group men. However, this interaction was not significant for either confidence ( $F(2, 383) = 1.53, p = .22, \eta_p^2 = .01$ ) or sensitivity ( $F(2, 383) = 1.82, p = .16, \eta_p^2 = .01$ ) in perceiving disgust, suggesting that there were no group differences in the extent to which beliefs that status differences are legitimate predicted these outcomes (for all outcomes, the main effect of these beliefs remained significant,  $ps > .02$ ). This suggests that believing status differences are legitimate may indeed lead only stigmatized groups to be less confident in, and less discriminating in perceiving, fear in others' faces, but that these beliefs lead to less confidence and discrimination in perceiving disgust in others' faces, regardless one's group membership.

Might the apparent effects of believing that status differences are legitimate be in fact driven by participants' political conservatism? One could make this prediction because conservatism can include a preference for maintaining of the status quo, as well as a belief in meritocracy, and thus conservatives might tend to believe that existing status differences are acceptable and/or justified. However, the data do not support this hypothesis. Belief that status differences are legitimate only modestly correlated with political conservatism across the sample,  $r(385) = .40, p < .001$ , political conservatism did not predict any dependent variable for any group (all  $ps > .10$ ), and controlling for

political conservatism did not eliminate any effects of belief that status differences are legitimate. Of course this does not eliminate the possibility that some other variable may account for the effect of this belief on confidence and bias in perceiving fear and disgust, but it does appear that political conservatism is unlikely to account for these effects.

**Participants' belief that they can manage stigmatizing situations.** I predicted that to the extent participants believe they can manage stigmatizing situations, they would be more likely to see fear or disgust on others' faces.

*Black men.* For Black men, belief that they can manage stigmatizing situations predicted greater overall confidence that a face expresses fear,  $\beta = -.33, t = -2.74, p = .008$ , and greater sensitivity in determining whether a face is fearful,  $\beta = .26, t = 2.11, p = .04$ . It also predicted greater bias to call a face fearful (or rather, given the overall conservative tendency in the sample for participants to call a face fearful, a less conservative bias to call a face fearful),  $\beta = .29, t = 2.40, p = .02$ .

Black men's belief that they can manage stigmatizing situations also predicted greater overall confidence that a face expresses disgust,  $\beta = .29, t = 2.35, p = .02$ . It did not, however, predict Black men's sensitivity in determining whether a face is disgusted,  $\beta = .16, t = 1.24, p = .22$ , or bias to call a face disgusted,  $\beta = .12, t = .94, p = .35$ .

*Overweight men.* For overweight men, belief that they can manage stigmatizing situations did not predict any outcomes for fear or disgust: overall confidence that a face is expressing fear,  $\beta = -.03, t = -.36, p = .72$ , sensitivity in determining whether a face is fearful,  $\beta = -.01, t = -.06, p = .95$ , or bias to call a face fearful,  $\beta = -.03, t = -.39, p = .70$ , confidence that a face expresses disgust,  $\beta = .05, t = .62, p = .53$ , sensitivity in determining whether a face is disgusted,  $\beta = .04, t = .50, p = .62$ , bias to call a face

disgusted,  $\beta = -.01$ ,  $t = -.14$ . This was not because overweight men were less certain than Black men that they could manage stigmatizing situations – in fact, they were *more* likely to say they could manage stigmatizing situations than were Black men (for group means and *t*-test, see Table 3).

Thus, Black men's belief that they can manage stigmatizing situations predict greater confidence, sensitivity, and bias in perceiving fear, as well as confidence that a face expresses disgust. In contrast, it did not predict perception of either fear or disgust for overweight men.



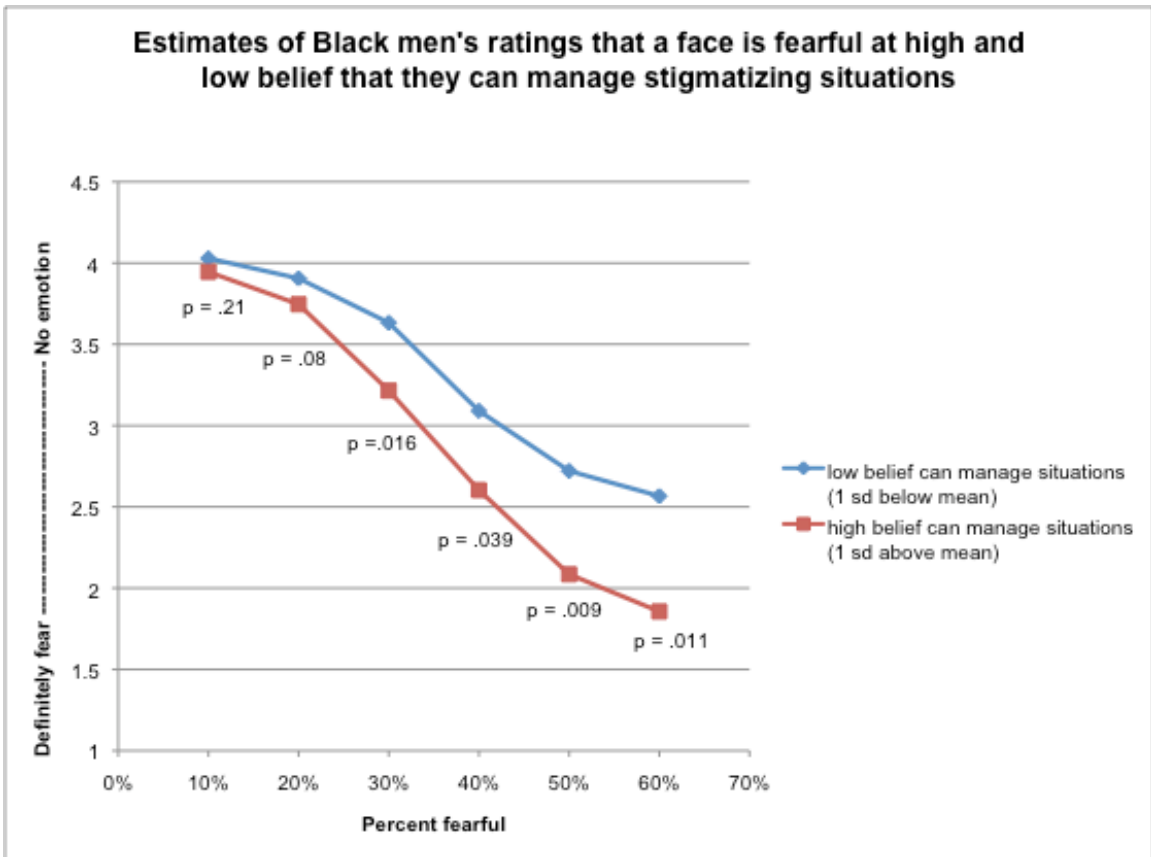


Figure 11. Estimates of Black men's ratings that a face is fearful at high and low belief that they can manage stigmatizing situations. p-values indicate the significance of the correlation of participant's belief that they can manage stigmatizing situations with confidence that a face is fearful at each percentage of target fear.

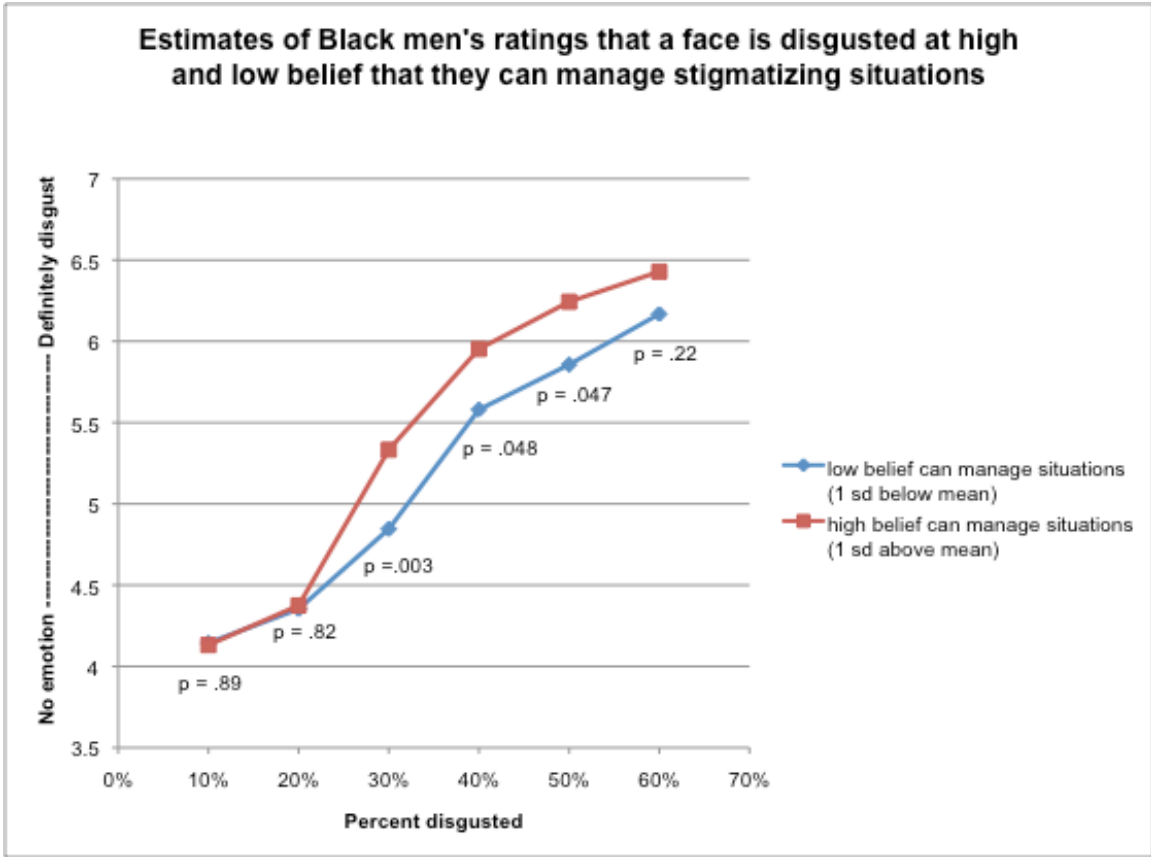


Figure 12. Estimates of Black men's ratings that a face is disgusted at high and low belief that they can manage stigmatizing situations. P-values indicate the significance of the correlation of participant's belief that they can manage stigmatizing situations with confidence that a face is disgusted at each percentage of target disgust.

**Stigma consciousness.** I predicted that greater stigma consciousness would positively predict perception of prejudice-relevant emotional expressions.

*Black men.* For Black men, stigma consciousness predicted greater overall confidence that a face is expressing fear,  $\beta = -.29, t = -2.37, p = .02$ , as well as greater sensitivity in determining whether a face is fearful,  $\beta = .28, t = 2.31, p = .03$ . Stigma consciousness did not predict Black men's bias to call faces fearful,  $\beta = .15, t = 1.18, p = .24$ .

For Black men, stigma consciousness did not predict greater overall confidence that a face expresses disgust,  $\beta = .14, t = 1.12, p = .26$ . However, there was a marginally significant interaction of stigma consciousness with prejudice salience condition,  $\beta = .24, t = 1.94, p = .06$ . Simple slopes tests show that when prejudice is salient, stigma consciousness does not predict Black men's confidence that a face expresses disgust,  $\beta = -.21, t = -1.04, p = .30$ , whereas when prejudice is not salient, stigma consciousness marginally significantly predicts lesser confidence that a face is disgusted,  $\beta = .29, t = 1.81, p = .08$ .

Stigma consciousness did not predict Black men's sensitivity in determining whether a face is disgusted,  $\beta = .12, t = .93, p = .36$ . It also did not predict Black men's bias to call a face disgusted overall,  $\beta = .10, t = .78, p = .44$ , but it did interact with prejudice salience condition to predict bias to call a face disgusted,  $\beta = .26, t = 2.05, p = .05$ . Simple slopes tests show that when prejudice is salient, stigma consciousness predicts a nonsignificant tendency toward a conservative bias to call faces disgusted,  $\beta = -.26, t = -1.21, p = .20$ , and when prejudice is not salient, stigma consciousness

nonsignificantly predicts a less conservative bias to call faces disgusted,  $\beta = .27, t = 1.65, p = .10$ .

*Overweight men.* For overweight men, stigma consciousness predicted greater confidence that a face is expressing fear,  $\beta = -.20, t = -2.70, p = .008$ , as well as greater sensitivity in determining whether a face is fearful,  $\beta = .14, t = 1.95, p = .05$ . Stigma consciousness also predicted a less conservative bias to call a face fearful,  $\beta = .16, t = 2.28, p = .02$ .

For overweight men, stigma consciousness marginally predicted greater confidence that a face expresses disgust,  $\beta = .13, t = 1.76, p = .08$ . Stigma consciousness did not predict overweight men's sensitivity in determining whether a face is disgusted,  $\beta = .12, t = 1.66, p = .10$ , or bias to call a face disgusted,  $\beta = -.02, t = -.26, p = .79$ .

Thus, for both Black and overweight men, greater stigma consciousness positively predicted confidence that a face expresses fear, and sensitivity in determining whether a face is fearful. For overweight men, stigma consciousness also predicted a less conservative bias to call a face fearful. For neither group did stigma consciousness clearly predict confidence, sensitivity, or bias in perceiving disgust.

**Metastereotypes that people fear one's group.**<sup>6</sup> I predicted that holding stronger metastereotypes that people fear one's group would predict greater perception of fear on others' faces.

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<sup>6</sup> I had no predictions that fear metastereotypes would predict perception of disgust expressions, but I ran the analyses anyway. The results are below:

**Fear metastereotypes predicting disgust.** Fear metastereotypes did not predict Black men's confidence that a face expresses disgust,  $\beta = .17, t = 1.38, p = .17$ . There was no main effect of fear metastereotypes predicting Black men's sensitivity in determining whether a face is disgusted,  $\beta = .11, t = .88, p = .38$ . However, prejudice

*Black men.* For Black men, fear metastereotypes did not predict overall confidence that a face is expressing fear,  $\beta = -.12, t = -.93, p = .36$ , or sensitivity in determining whether a face is fearful,  $\beta = .06, t = .49, p = .62$ . It did, however, predict a greater bias to call a face fearful,  $\beta = .33, t = 2.77, p = .007$  (See Figure 13 for Black men's estimated bias to call a face fearful at each level of the percentage morphs of fearful faces, at high and low levels of fear metastereotypes).

*Overweight men.* For overweight men, fear metastereotypes did not predict overall confidence that a face is expressing fear,  $\beta = .13, t = 1.72, p = .09$ , though there was a significant interaction with prejudice salience,  $\beta = .16, t = 2.23, p = .03$ . Simple slopes tests show that when prejudice is salient, fear metastereotypes do not predict

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salience condition did interact with fear metastereotypes,  $\beta = -.29, t = -2.33, p = .02$ . Simple effects tests show that when prejudice is not salient, fear metastereotypes do not predict sensitivity at discriminating whether or not a face expresses disgust,  $\beta = -.16, t = -.91, p = .37$ , whereas it does when prejudice is salient,  $\beta = .42, t = 2.38, p = .02$ . Black men's fear metastereotypes also predicted Black men's bias to call a face disgusted,  $\beta = .36, t = 3.06, p = .003$ .

For overweight men, fear metastereotypes predicted confidence that a face expresses disgust,  $\beta = -.21, t = -2.85, p = .005$ , and it did interact with prejudice salience condition,  $\beta = -.19, t = 2.64, p = .009$ . Simple effects tests show that when prejudice is not salient, fear metastereotypes predict sensitivity at discriminating whether or not a face expresses disgust,  $\beta = -.38, t = -3.90, p < .001$ , whereas it does not when prejudice is salient,  $\beta = -.01, t = -.07, p = .95$ .

Fear metastereotypes also predicted overweight men's sensitivity in determining whether a face is disgusted,  $\beta = -.15, t = -2.04, p = .04$ . Fear metastereotypes did not predict overweight men's bias to call a face disgusted,  $\beta = .03, t = .45, p = .66$ .

Overall, then, the relationship of fear metastereotypes to disgust perception is unclear: Black men's fear metastereotypes predicted a generally less conservative bias to call a face disgusted, and when prejudice was salient, fear metastereotypes also predicted Black men's lesser sensitivity at determining whether a face expresses disgust. For overweight men, fear metastereotypes predicted generally lower sensitivity at determining whether a face expresses disgust, and, when prejudice was salient, lesser confidence that a face expresses disgust.

overweight men's confidence that a face expresses fear,  $\beta = -.05$ ,  $t = -.46$ ,  $p = .65$ , whereas when prejudice is not salient, fear metastereotypes predict lesser confidence that a face is fearful,  $\beta = .27$ ,  $t = 2.75$ ,  $p = .007$ . Overweight men's fear metastereotypes also predicted lesser sensitivity in determining whether a face is fearful,  $\beta = -.15$ ,  $t = -2.00$ ,  $p = .05$ . Fear metastereotypes did not, however, predict overweight men's bias to call a face fearful,  $\beta = .05$ ,  $t = .68$ ,  $p = .50$ .

Thus, there was some evidence that for Black men, greater metastereotypes of fear predict a tendency to see fear on others' faces. For overweight men for whom prejudice was not salient, fear metastereotypes predicted less confidence in detecting fear on faces, and for all overweight participants, fear metastereotypes predicted *less* sensitivity in calling a face fearful.

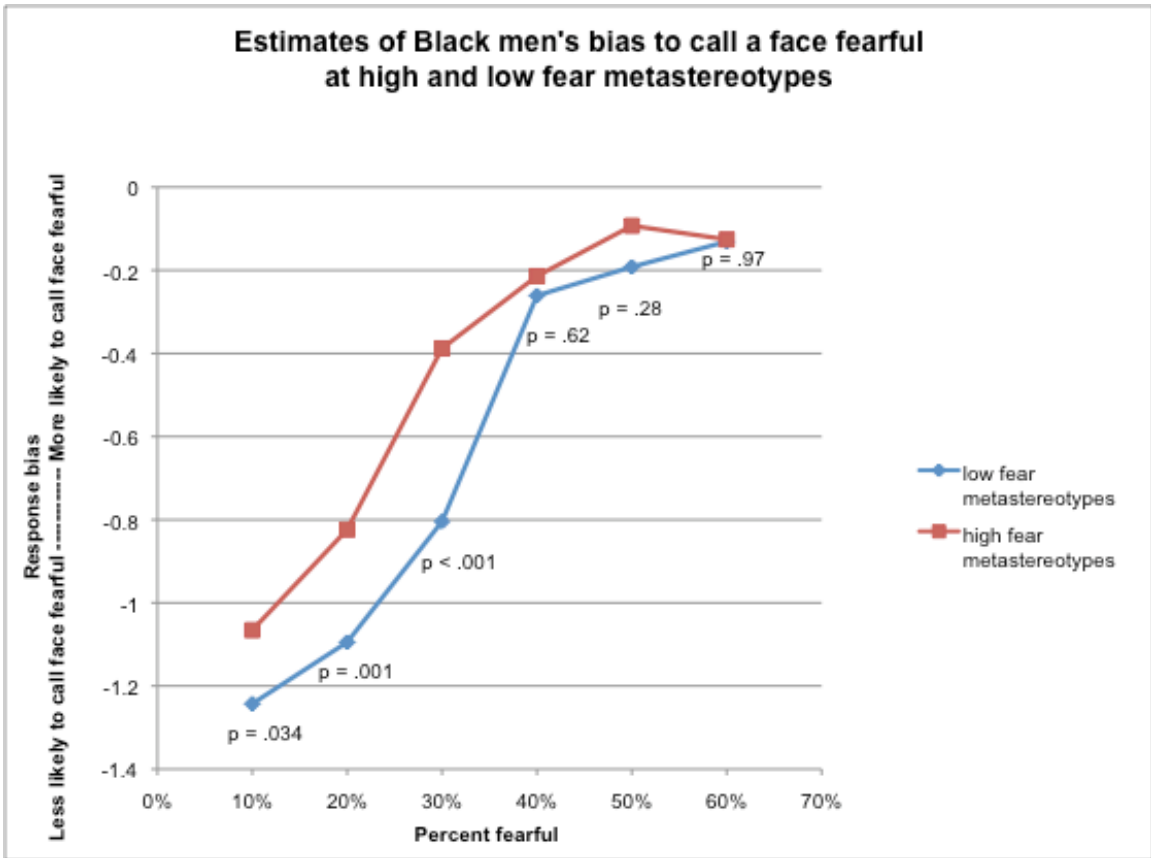


Figure 13. Black men's estimated bias to call a face fearful at each level of the percentage morphs of fearful faces, at high and low levels of fear metastereotypes. p-values indicate the significance of the correlation of fear metastereotypes with response bias at each percentage of target fear.

### **Metastereotypes that people are physically disgusted by one's group.<sup>7</sup>**

predicted that holding stronger metastereotypes that people are physically disgusted by one's group would predict greater perception of disgust on others' faces.

*Black men.* For Black men, physical disgust metastereotypes did not predict greater overall confidence that a face expresses disgust,  $\beta = -.08$ ,  $t = -.59$ ,  $p = .56$ , but did interact with prejudice salience condition to predict confidence that a face expresses disgust,  $\beta = -.66$ ,  $t = -3.01$ ,  $p = .004$ . Simple slopes tests show that when prejudice is not salient, stronger physical disgust metastereotypes predict lesser confidence in detecting disgust,  $\beta = -.33$ ,  $t = -2.22$ ,  $p = .03$ , but when prejudice is salient, stronger physical disgust metastereotypes predict greater confidence,  $\beta = .39$ ,  $t = 2.07$ ,  $p = .04$ .

In parallel, although physical disgust metastereotypes did not predict Black men's sensitivity in determining whether a face is disgusted,  $\beta = -.16$ ,  $t = -1.25$ ,  $p = .22$ , prejudice salience condition did interact with physical disgust metastereotypes to predict sensitivity,  $\beta = -.78$ ,  $t = -3.63$ ,  $p = .001$ . Simple slopes tests show that when prejudice is not salient, Black men's physical disgust metastereotypes predict lesser sensitivity at discriminating whether or not a face expresses disgust,  $\beta = -.49$ ,  $t = -3.25$ ,  $p = .002$ ,

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<sup>7</sup> **Disgust metastereotypes predicting fear.** For Black men, physical disgust metastereotypes did not predict overall confidence that a face is expressing fear,  $\beta = .20$ ,  $t = 1.59$ ,  $p = .12$ , sensitivity in determining whether a face is fearful,  $\beta = -.08$ ,  $t = -.59$ ,  $p = .56$ , or bias to call a face fearful,  $\beta = .13$ ,  $t = 1.06$ ,  $p = .30$ .

For overweight men, physical disgust metastereotypes did not predict overall confidence that a face is expressing fear,  $\beta = -.09$ ,  $t = -1.22$ ,  $p = .23$ , sensitivity in determining whether a face is fearful,  $\beta = .02$ ,  $t = .27$ ,  $p = .79$ , or bias to call a face fearful,  $\beta = .10$ ,  $t = 1.35$ ,  $p = .18$ .



whereas when prejudice is salient, physical disgust metastereotypes predict greater sensitivity,  $\beta = .37, t = 2.03, p = .05$ .

Physical disgust metastereotypes also predicted Black men's bias to call a face disgusted,  $\beta = .32, t = 2.64, p = .01$  (See Figure 14 for Black men's overall estimated bias to call a face disgusted at each level of the percentage morphs of disgusted faces, at high and low levels of disgust metastereotypes).

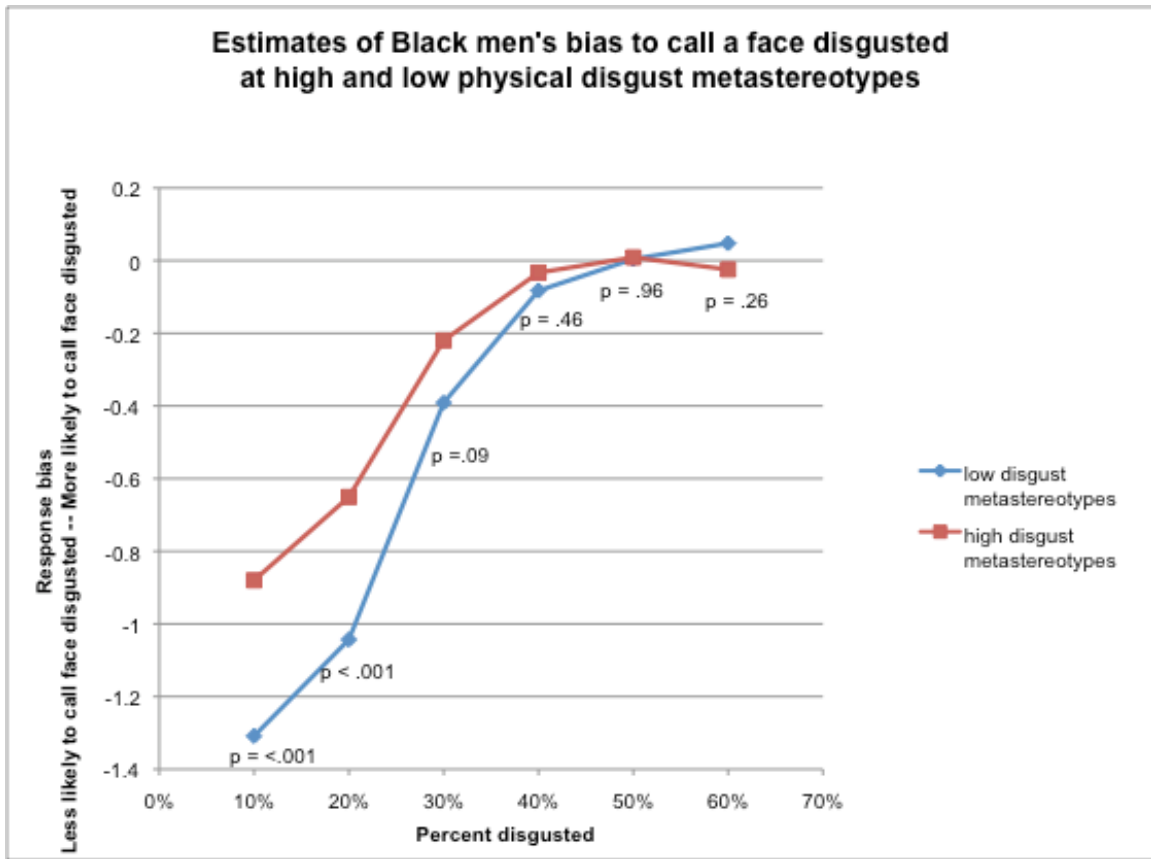


Figure 14. Black men’s estimated bias to call a face disgusted at each level of the percentage morphs of disgusted faces, at high and low levels of disgust metastereotypes. P-values indicate the significance of the correlation of disgust metastereotypes with response bias at each percentage of target disgust.

*Overweight men.* For overweight men, physical disgust metastereotypes did not predict confidence that a face expresses disgust,  $\beta = -.04, t = -.50, p = .62$  or sensitivity in determining whether a face is disgusted,  $\beta = .02, t = .27, p = .79$ .

Physical disgust metastereotypes did not predict overweight men's bias to call a face disgusted,  $\beta = -.03, t = -.38, p = .71$ , but did interact with prejudice salience condition in predicting bias to call a face disgusted,  $\beta = -.61, t = -2.61, p = .01$ . Simple slopes tests show that when prejudice is not salient, physical disgust metastereotypes predict, to a marginally significant extent, lesser bias at discriminating whether or not a face expresses disgust,  $\beta = -.17, t = -1.86, p = .07$ , whereas when prejudice is salient, physical disgust metastereotypes predict greater bias to a marginally significant extent,  $\beta = .23, t = 1.88, p = .06$ .

Thus, for Black men, metastereotypes of physical disgust predicted lesser confidence and sensitivity when prejudice was not salient, but greater confidence and sensitivity when prejudice was salient, in judging disgust on others' faces. For overweight men, when prejudice was salient, metastereotypes of physical disgust marginally predicted greater bias to call a face disgusted, and when prejudice was not salient, marginally predicted a *lesser* bias to call a face disgusted.

**Summary.** There was little support for Predictions 1 through 3. When prejudice was not salient, Black men did not overperceive fear (in fact, they underperceived it), and overweight men did not overperceive disgust. Nor were these predicted tendencies evident when prejudice is salient. And lastly, Black men did not show differential perception of women's fear expressions compared to men's fear expressions.

There was some evidence for Prediction 4. It appears that believing prejudice against one's group is justified, believing that status differences are legitimate, believing that you cannot manage stigmatizing interactions, and having low stigma consciousness all predict, to some extent, less confident and sensitive perception of fear and/or disgust.

## **Discussion**

### **Summary of findings**

**Central propositions.** This project makes several propositions. The most broad-level proposition is that members of stigmatized groups show specialized perception (over- or under-perception) of others' negative emotional expressions. The next, more fine-grained proposition is that members of different stigmatized groups show *differential patterns* of emotion perception. And the most fine-grained proposition is that members of stigmatized groups become specialized perceivers of those specific emotions that color the prejudices they most commonly face.

There is mixed evidence for the first proposition (members of stigmatized groups show specialized perception of others' negative emotional expressions): overall, Black men tended to perceive fear and disgust with lower confidence and sensitivity than comparison group men. Overweight men's perceptions, in contrast, generally did not differ from those of the comparison group men. However, the evidence from the moderator variables suggests that there may indeed be a relationship between being a member of a stigmatized group and perceiving other's emotional expressions. For example, for Black men and overweight men, belief that status differences are legitimate predicted underperception of fear on others' faces, whereas it did not for comparison group men.

There is also some evidence for the second proposition, that Black men and overweight people show different patterns of emotion perception. When prejudice is not salient, Black men are less confident in their perception of both fear and disgust on others' faces, whereas this is not so for overweight men. Likewise, Table 3 shows that somewhat different moderator variables are at play in guiding the two groups' perception of others' emotional expressions.

There is less clear evidence for the third proposition: that Black men will over- (or under-) perceive fear, whereas overweight men will over- (or under-) perceive disgust. The evidence does not line up neatly with this prediction. Instead, it appears that both Black men and overweight men may at some times show differential perception of both fear and disgust. There was thus little evidence to support the possibility of distinct psychologies of perceiving fear vs. disgust, at least for these groups.

**Belief that group status differences are legitimate.** One of the strongest statistical findings among these data was that to the extent Black men and overweight men believe group status differences are legitimate, the less likely they were to detect others' fear and disgust (as measured by both confidence and sensitivity). As discussed in the results section, this does not appear to be due to participants' conservatism. Furthermore, if the relationship holds for stigmatized (Black and overweight) but not non-stigmatized (comparison) groups, that would rule out some alternative explanations about general tendencies to perceive fear and disgust on others' faces that track this belief (such as engagement with the task). There was some evidence for this (for fear perception, and nonsignificantly for disgust perception), though a larger sample will help to determine whether this pattern replicates and the relationship is indeed stronger among

stigmatized than non-stigmatized groups. Nonetheless, this possibility echoes earlier research (Major et al., 2002), which found that another so-called “legitimizing” belief (belief in individual status mobility) predicted lesser perception of personal discrimination for low-status group members. Thus, stigmatized group members’ belief that differences are legitimate may lead not only to lesser attributions to discrimination, but to weaker attention to and detection of prejudicial emotions.

### **Implications for the psychology of perceiving prejudice**

**Black men.** If these patterns are in fact robust, they suggest that Black men tend to less confidently and sensitively perceive fear and disgust on other’s faces, *unless* prejudice is salient. Thus Black men may be less discriminating about whether others are expressing these emotions toward them unless the situation they are in makes salient their own beliefs about prejudice.

Although few predictions regarding response bias were borne out – and indeed, across the groups, few differences in response bias emerged – one intriguing finding is that the extent to which Black men believe others fear their group, they show a bias to be more willing to call a face fearful (and likewise for disgust metastereotypes and bias to call a face disgusted). This suggests that Black men’s beliefs about others’ prejudices toward them may indeed color the emotions they see on others’ faces.

**Overweight men.** Very few effects were observed for overweight men in terms of sensitivity, confidence, or bias in perceiving emotions. Thus was true across prejudice salience conditions, as well as when comparing to the comparison group men. Thus, it is unclear what conclusion to draw from the overweight men’s data. Perhaps they are not chronically concerned about stigma, or perhaps stigma does not color their experiences to

the extent that it colors Black men's experiences. Perhaps because Black men may be socialized to expect, detect, and manage prejudice, they may develop a distinct psychology of fear and disgust perception, whereas because overweight people often become overweight later in life and also are not socialized to expect or manage prejudice in the same way, they do not develop a distinct psychology of fear and disgust perception.

**The functional nature of prejudice perception.** I proposed that the detection of prejudicial emotional expressions should be guided by the extent to which that emotion is perceived as useful information. I did find some support for the functional nature of emotion perception among the moderator effects. Some variables that would make perceiving other's fear and disgust less useful (belief that prejudice toward one's group is justified, belief that group status differences are legitimate) predicted less sensitive and confident detection of emotional expressions. In contrast, other variables that would render others' fear and disgust useful or expected information (belief that one can manage stigmatizing interactions, stigma consciousness) to some extent predicted more sensitive and confident detection of emotional expressions. Future work should seek to replicate and explore these effects.

### **Sample and stimuli**

**Inclusion of overweight Black men.** As noted in the Method section, including overweight Black men with the other Black men is a risk for a couple reasons: a) being overweight may lead Black men to have a baseline psychology of perceiving emotions that is similar to other overweight men (e.g., overperceiving disgust), and b) being an overweight Black man may lead one to be subjected to qualitatively different prejudices

and stereotypes than non-overweight Black men (e.g., perhaps people are afraid of non-overweight Black men, but not obese Black men). Given the small number of overweight Black men in the sample, I did not have the statistical power to formally test for group differences between overweight and non-overweight Black men. Instead, to examine whether these possibilities might be distorting the Black male group's results, I compared the patterns of results for the sample both including and excluding overweight Black men. The patterns were the same, and thus I included all overweight Black men in the sample. In the future, however, it would be useful to recruit sufficient numbers of Black men to be able to test whether identification as overweight produces different patterns of emotion perception.

**Some disgusted faces = angry?** Several participants noted in their comments that some of the faces appeared to be angry. The structure of the current task forced participants to identify the face as expressing disgust, fear, or no emotion, but if some faces appeared angry then the results may be colored somewhat by participants' detection of and responses to anger expressions. Both stigmatized participant groups (Black men and overweight men) reported that people are equivalently angry toward their groups ( $M_s = 3.95$  and  $3.94$ , respectively), so any perception that the faces are angry is unlikely to account for group differences in responding to disgust. Still, one possibility for future work would be to pre-rate the faces on the extent to which they express anger, and choose only those faces not seen to express anger. If, however, the facial morphology of anger and disgust expressions overlap, then this may not help, and other manifestations of emotional expression may be useful (see below).



## **Future directions**

**Other manifestations of fear and disgust.** There are multiple channels through which emotions – and likewise, prejudice – are expressed. Members of stigmatized groups may thus use other sources in addition to facial expressions to determine how someone might be feeling and might behave toward them. For example, body language and speech might be used to gauge whether someone is afraid of or disgusted by you. Indeed, at modest distances body language may be a more unambiguous cue of others' perception of the affordances you pose than are facial expressions, as well as one that is less controlled, and thus stigmatized targets might more sensitively perceive fearful or disgusted body language in others.

**Interaction context.** This study only required participants to briefly look at faces of people they had never seen before. Participants also likely completed the study from the comfort of their own home or workplace. This context may be quite different from contexts in which people expect to be targets of prejudice. For example, Brent Staples' anecdote that others fear him took place during the night (Staples, 1995), and indeed, people's stereotypes toward threatening outgroups are more salient when they are in the dark and thus are more (heuristically) vulnerable to danger (Schaller, et al., 2003). It may be that Black men are not particularly attuned to others' fear unless they are in a situation that might be relevant to fear-based prejudice. In the current study, Black men trended toward greater confidence that a face is fearful when prejudice was salient, compared to when it was not. Future work could perhaps more powerfully manipulate prejudice-relevance by changing the violence-threat-relevance of the situation in which Black men are detecting others' fear. Likewise, it may be that in disease- or reciprocity-threat-

relevant situations, overweight people are more sensitive to whether others are feeling disgust toward them.

**Stigma visibility.** Both race and weight are visible attributes. Thus, people who are stigmatized based on race and weight may come to expect others' negative emotional expressions as responses to these visible, stigmatized characteristics. Would those with concealable stigmas become similarly attuned to others' negative expressions? One might predict that those with completely concealable stigmas (e.g., religious orientation) may in fact be unlikely to differently perceive others' negative expressions, because they likely have less experience with others expressing these emotions directly at them. In contrast, perhaps someone with a *potentially* concealable, but not entirely concealable, stigma (e.g., an effeminate gay man), would be vigilant for signs of potential prejudice, and thus be more likely to detect subtle signs of negative emotions in others, and/or be biased to over-perceive those emotions.

### **Implications for an affordance-based approach to managing prejudice**

This project began from an affordance-based analysis of how targets of prejudice might try to detect others' prejudice toward them. Some results supported the utility of this analysis, and more broadly, of adopting a functional approach (e.g., the moderators that predict functionality of detecting others' disgust and fear). Other results did not neatly line up with my affordance-based predictions (e.g., Black men often showed parallel effects for disgust and fear, instead of for fear only; overweight men showed few differences from the comparison group in perceiving disgust). However, instead of rejecting the affordance-based approach to managing stigma, we may need to more seriously consider the complexity of the affordances these groups are seen to pose, as

well as when these affordances are relevant to the target's psychology. I have characterized Black men as targeted with fear-based prejudice, whereas overweight men are targeted with disgust-based prejudice. In truth these groups are more accurately characterized as being targeted *primarily* with fear and disgust, respectively; the threats these groups are seen to pose, and the emotions direction toward them, do not consist of one emotion only, but are in fact complex arrays of multiple threats and emotions. This complexity was registered in the texture of these groups' metastereotypes, and thus these groups may become specialized perceivers of multiple, affordance-relevant emotions.

An affordance-based perspective also highlights two other important elements of detecting others' prejudice: The affordance-relevance of the current situation (as discussed above regarding the darkness of the room; the health-relevance of the setting), and the particular relationship of the stigmatized to the potential stigmatizer (e.g., Is the potential stigmatizer likely to feel threatened by the stigmatized person? What is the cost to the stigmatized person of missing this *particular* person's emotional expression?). Incorporating these elements into future research may help us to discover how people who are chronically seen to pose violence, disease, or other threats may sensitively attune their perception of others' prejudices in order to functionally manage their social interactions.

More broadly, this affordance-based approach to understanding the target side of stigma may help us to discover and explain a variety of phenomena beyond emotion perception. Once prejudice is detected, what specific strategies do targets use to manage that prejudice? Which emotion-specific prejudices affects self-esteem? What norms and

skills emerge within stigmatized groups for managing prejudice? An affordance-based approach may have much to offer these and other questions.

### **Conclusion**

Research is only beginning to uncover how threat- and emotion-specific prejudice affects targets. This project adopts a functional approach to understanding how members of stigmatized groups may come to be differently attuned to others' emotions, and provides a starting point for understanding the functional nature of perceiving prejudice-relevant emotional expressions.

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APPENDIX A

STEREOTYPE/PREJUDICE SALIENCE MANIPULATION

Items below refer to “obese people” and were administered to overweight men. Items referring, instead, to “African Americans” were administered to Black men. For both groups, these items were first administered in reference to “Native Americans”.

Instructions:

What do people generally think of **obese people**? Take a second to think about most people’s impressions of **obese people**.

When most people think about **obese people**, in general, they feel...

(1=not at all, 9=extremely)

1. comfortable with them?
2. morally disgusted by them?
3. pity for them?
4. frightened of them?
5. physically disgusted by them?
6. negative towards them?
7. angry at them?
8. grossed out by them?
9. positive towards them?
10. admiration for them?
11. afraid of them?
12. dislike for them?

What do people generally think of **obese people**? Take a second to think about most people's impressions of **obese people**.

**In general, most people feel that obese people...**

1. provide benefits to others.
2. pose problems for others.
3. choose to take more from than they give back.
4. provide enjoyable entertainment (e.g., art, music, food).
5. endanger the physical safety of others.
6. take and/or damage others' personal property or resources.
7. promote values that directly oppose others' values.
8. increase others' risk of physical illness.
9. protect others' physical safety.
10. cannot be trusted.
11. need to take more than they are able to give back.
12. are physically dangerous.
13. steal and/or harm others' personal possessions.
14. offer interesting and/or novel amusements (e.g., art, music, food).
15. harm the medical health of others.

APPENDIX B

MODERATORS ADMINISTERED AS PART OF THE PRE-SCREENING SURVEY

The following items are from established measures of legitimizing ideologies (O'Brien & Major, 2005)

<i>Items from the Belief in a Just World Scale (r=.43)</i>	Strongly Disagree						Strongly Agree
I feel that people get what they deserve.	1	2	3	4	5	6	7
I feel that people treat each other with the respect that they deserve.	1	2	3	4	5	6	7
<i>Items from the Protestant Work Ethic Scale (r=.64)</i>	Strongly Disagree						Strongly Agree
1. If people work hard they almost always get what they want.	1	2	3	4	5	6	7
2. Most people who don't get ahead should not blame the system; they really have only themselves to blame.	1	2	3	4	5	6	7
<i>Legitimizing items (r=.59)</i>	Strongly Disagree						Strongly Agree
1. America is a just society where differences in status between groups reflect actual group differences.	1	2	3	4	5	6	7
2. Differences in status between groups in American society are fair.	1	2	3	4	5	6	7

APPENDIX C

PROPOSED MODERATORS MEASURED IN REFERENCE TO BOTH NATIVE  
AMERICANS AND ONE'S GROUP [BLACK PEOPLE/OBESE PEOPLE]



Participants' belief that a person's prejudice can change

(items adapted from Neel & Shapiro (2012) to be specific to prejudice toward obese people and Black people).

(Black participants: $\alpha = .87$ ; Overweight participants: $\alpha = .83$ )	Strongly Disagree			Strongly Agree		
1. If a person is prejudiced toward [Black people/obese people], there isn't much that can be done to change their feelings.	1	2	3	4	5	6
2. A person's level of bias toward [Black people/obese people] is something basic about them and they can't change it much.	1	2	3	4	5	6
3. People can always substantially change how biased they are toward [Black people/obese people]. (R)	1	2	3	4	5	6

Participants' belief that prejudice toward their group is just/unjust

[Generated for this study]

*Group-specific beliefs that prejudice/discrimination is just* (Black participants:  $r = .52$ ; Overweight participants:  $r = .46$ )

[Given these low correlations, analyses were conducted on the separate items as well. This did not change the results.

	Strongly Disagree			Strongly Agree			
1. People should not treat [Black people/obese people] differently from others. (R)	1	2	3	4	5	6	7
2. It's OK that people sometimes feel negatively toward [Black people/obese people].	1	2	3	4	5	6	7

Perceived social acceptability of prejudice toward the participant's group. [Generated for this study]

(Black participants: $r = .53$ ; Overweight participants: $r = .62$ )	Strongly Disagree			Strongly Agree			
---	-------------------	--	--	----------------	--	--	--

- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1. Most people think it is OK to hold prejudices toward [Black people/ obese people]. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. It is socially acceptable to be prejudiced toward [Black people/obese people]. (R) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Items selected and modified from the Stigma Consciousness Scale (Pinel, 1999)

- |   |                   |   |   |   |   |   |                      |
|---|-------------------|---|---|---|---|---|----------------------|
| (Black participants: $\alpha = .81$ ;<br>Overweight participants: $\alpha = .68$ )            | Strongly<br>Agree |   |   |   |   |   | Strongly<br>Disagree |
| 1. Most people do not judge [Black people/ obese people] on the basis of their [race/weight]. | 0                 | 1 | 2 | 3 | 4 | 5 | 6                    |
| 2. Most people have a lot more [racist/anti-fat] thoughts than they actually express.         | 0                 | 1 | 2 | 3 | 4 | 5 | 6                    |
| 3. Most people have a problem viewing [Black people / overweight people] as equals.           | 0                 | 1 | 2 | 3 | 4 | 5 | 6                    |

The perceived severity of discrimination faced by their group / perceptions of how damaging discrimination would be.

[Generated for this study]

- |   |                      |   |   |   |   |   |                     |
|---|----------------------|---|---|---|---|---|---------------------|
| In general, if a [Black person/obese person] is the target of prejudice/discrimination... | Not at all<br>severe |   |   |   |   |   | Extremely<br>severe |
| 1. how severe are the overall consequences for the [Black person/obese person]?           | 1                    | 2 | 3 | 4 | 5 | 6 | 7                   |

APPENDIX D

FINAL SET OF PROPOSED MODERATORS

Participants' motivation to detect and manage others' prejudice toward them. [Generated for this study]

<i>Motivation to detect others' prejudice (Black participants: <math>r=.86</math>; overweight participants: <math>r=.89</math>)</i>	Strongly Disagree					Strongly Agree
1. If someone were prejudiced toward me, I would want to know that.	1	2	3	4	5	6 7
2. I want to know who is and is not prejudiced toward me.	1	2	3	4	5	6 7
<i>Motivation to manage others' prejudice (Black participants: <math>r=.49</math>; overweight participants: <math>r=.50</math>)</i>						
3. It is important to me that others are not prejudiced toward me.	1	2	3	4	5	6 7
4. If I think I might be the target of prejudice, I try to change that person's feelings.	1	2	3	4	5	6 7

Participants' belief that they can manage stigma-tinged interactions/situations.

[Generated for this study]

<i>(Black participants: <math>\alpha=.75</math>; overweight participants: <math>\alpha=.79</math>)</i>	Strongly Disagree					Strongly Agree
1. When someone is prejudiced toward me, there are things that I can do to make the situation better for myself.	1	2	3	4	5	6 7
2. If I think I might be the target of prejudice, there are things I can do to change that situation.	1	2	3	4	5	6 7
3. When someone is prejudiced toward me, the situation is out of my control. (R)	1	2	3	4	5	6 7

Participants' perceptions of how damaging personal discrimination would be.

<i>(Black participants: <math>\alpha=.83</math>; overweight participants: <math>\alpha=.83</math>)</i>	Strongly disagree					Strongly agree
1. If someone were to discriminate against me based on my [race/weight], that would have negative social consequences for me.	1	2	3	4	5	6 7

2. It would be stressful for me to be a target of someone's prejudice based on my [race/weight]. 1 2 3 4 5 6 7

3. Being a target of prejudice based on my [race/weight] would make it harder for me to achieve my goals. 1 2 3 4 5 6 7