

SOCIAL PSYCHOLOGY | RESEARCH ARTICLE

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Cogent Psychology (2016), 3: 1210998



Received: 12 April 2016
Accepted: 06 July 2016
First Published: 10 July 2016

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Reviewing editor:
Traci Craig, University of Idaho, USA

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Chip on the shoulder? The hunchback heuristic predicts the attribution of anger to low status groups and calm to high status groups

Chuma Kevin Owuamalam^{1*}, Maas Misha'ari Weerabangsa¹, Jaya Kumar Karunagharan¹ and Mark Rubin²

Abstract: Across societies, there is a tendency to associate members of low status groups with anger, and to associate members of high status groups with calm (i.e. the *hunchback heuristic*), but there is no empirical documentation for this phenomenon. Thus, in a pilot study ($N = 30$) we validated the stimuli that we generated to test the existence of a hunchback stereotype by distinguishing two interstatus contexts of skin-shade and race in terms of social status: Dark-skinned Indians (and Blacks) were perceived as lower in social status compared to light-skinned Indians (and Whites). Using a multi-method approach comprising an IAT-like protocol and explicit self-reports, Study 2 ($N = 80$) revealed that perceivers associated dark-skinned Indians with anger, and light-skinned Indians with calm: An effect that was explained by perceived social status. Study 3 ($N = 114$) corroborated the evidence from Study 2, but in the interstatus contexts of Blacks vs. Whites, and large men vs. slim men. Blacks (and large men) were associated with anger, and Whites (and slim men) were associated with calm. Additionally, Study 3 ruled out “racial prejudice” as an explanation for these trends. We conclude with an outline of the theoretical and practical implications of these findings.

ABOUT THE AUTHORS

Chuma Kevin Owuamalam is an assistant professor of social psychology at the University of Nottingham (Malaysia campus). His work centres on cognitions, emotions and behaviours associated with people's awareness of their own (and others') social status.

Maas Misha'ari Weerabangsa is a PhD student at the University of Nottingham. Her work centres on the lay hunchback heuristic of emotional attributions and she investigates this topic with Chuma Owuamalam.

Jaya Kumar Karunagharan holds an MSc in genetics and is currently a PhD student at the University of Nottingham. Jaya is interested in social anxieties within the classroom and examines this issue with Chuma Owuamalam. Jaya maintains an active interest in emotional regulation.

Mark Rubin is a senior lecturer in social psychology at the University of Newcastle, Australia. He is best known for his work on social identity and intergroup relations, including research on in-group identification, intergroup contact, perceived group variability and stereotyping.

PUBLIC INTEREST STATEMENT

In 2015, German Youtubers “Dit Is Normaal” disguised a copy of the Bible as the Qur'an and read some of its extreme contents to ordinary citizens at locations in Germany. They found that people were repulsed and viewed the excerpts they heard as extremely violent and barbaric, but softened their views when they learnt the verses were in fact from the Bible. Unbeknownst to these pranksters, their experiment unearthed what appears to be a fundamental heuristic that people use in their social judgements—the tendency to associate anger and violent conduct with low social status, and calm with high status. We refer to this phenomenon as the hunchback stereotype and provide the first rigorous test of its existence in a culture where the licence to display anger is presumed to be reserved for those in elevated positions. We further show that racial prejudice isn't necessarily responsible for this phenomenon.

Subjects: Behavioral Sciences; Politics & International Relations; Social Sciences

Keywords: hunchback stereotypes; Malaysia; identity; prejudice; social status

1. Introduction

People with this “chip on the shoulder” syndrome may react quietly with a “hurt feelings” attitude or maybe in a *violent burst of emotion*.

- Jim Lord (2016, our emphasis).

A “chip on the shoulder” is the expression often used to describe individuals with a sense of continuing frustration over mistreatment from others and, as the opening quote illustrates, people who feel this way are expected to vent their frustration via anger. Evidence abound regarding the widespread use of this assumption across societies, both in the West (e.g. the French’s *avoir une crotte sur le cœur*) and also in the East (e.g. the Chinese 愤恨不平 [fèn fèn bù píng]; and the Indo-Malay idiom *sakit hati*; cf. Rees & Silove, 2011). Although these expressions are ostensibly used for people who are aggrieved in some way, there are indications that the link they make between frustration and proneness to anger is more often directed towards groups that occupy low social status or are dehumanised in some way. In the United Kingdom, for instance, youths from lower social class backgrounds are perceived as *chavs*—a term with connotations of disadvantage, frustration and violent conduct (Jones, 2012; Loughnan, Haslam, Sutton, & Spencer, 2014). Similarly, folk beliefs in parts of Western Africa assume that people with a *hunchback* (a dehumanised demographic; Akosah-Sarpong, 2008) are so afflicted due to cumulated frustration in a previous life, which predisposes them to outbursts of anger (Owuamalam, Weerabangsa, Mamdouh, Karunagharan, & Rubin, 2014). Even a Google search for “angry” with a wildcard returns several hits that more directly associate members of undervalued or stereotyped groups in society with anger: e.g. “the angry black woman”, “the angry black man”, “the angry feminist”, “the angry wife”, “angry nerd” and so on.

Inspired by the Western African lay beliefs about the hunched back, we use the term *hunchback stereotype* to describe the tendency for people to associate anger with low social status based on the presumption that members of such groups are likely to encounter more frustrating situations and are therefore more likely to vent this frustration. Extending this reasoning, then, people from privileged backgrounds may be associated with calm even in the face of adversity, because being calm is a demeanour thought to be necessary to achieve goals, and those in elevated positions should act in this way in order for their perceived competence to manifest (Tablante, Durante, & Fiske, *in press*).

Surprisingly, despite the anecdotal pointers to the existence of a hunchback stereotype as a fundamental heuristic in the judgements of the *anger* and *calm* of people with a low or high status, not a single empirical study has documented the reality of its existence. It is important to establish whether people use a hunchback heuristic in their inferences about which people are or aren’t normally expressive of anger, because (a) anger is a threat inducing emotion, (b) people who feel threatened generally engage a defensive “fight” response and (c) a “fight” response can often have detrimental consequences for the intended targets of this behaviour, as seen in recent fatal shootings of young Black men in North America by law enforcement officers (CNN News Report, 2014; Lowery, 2016; McLaughlin, 2015).

1.1. Is there a basis for the hunchback stereotype?

Several theories exist on the basis of which one can infer the existence of a hunchback stereotype. According to the stereotype content model (SCM; Fiske, Cuddy, Glick, & Xu, 2002), lay perceivers often assign the “incompetence” label to members of low status groups due to a presumed inability to overcome difficulties and, by extension, those who are frustrated can be expected to vent this emotion: a conclusion that even the lay frustration-aggression theories put forward by Berkowitz (1989) and by Carlsmith, Wilson, and Gilbert (2008) agree with. Likewise, individuals who occupy a high

social status are expected to be competent, even when faced with difficult situations and being calm (or cold) is thought to be a state necessary for the competence expected of them to shine through (cf. Tablante et al., *in press*). In short the SCM predicts the hunchback stereotype in relation to anger and calm attributions to low and high status groups, respectively.

Other theoretical formulations of status-based emotional expressivity, such as those proposed by Keltner, Gruenfeld, and Anderson (2003), also concur with the SCM, in that they explicitly associate negative emotions (e.g. anger) with low social status, and positive emotions (e.g. calm) with high social status. The reason for these associations is also traceable to the broad premise underlying the hunchback stereotype: members of low status groups encounter frustration more, while their higher status counterparts feel satisfied and content with the privileges bestowed by their elevated position. A proposition that resonates with the well-documented *halo effect* (Nisbett & Wilson, 1977): the tendency for people to associate undesirable traits to less attractive people (or those who are low in status) compared to their more attractive counterparts (or those who are high in status). Only that we extend this logic to the context of emotional attributions.

1.2. Are there reasons for these propositions?

The extant literature on anger attributions has focused largely on the racial context involving the relationship between Blacks (undervalued group) and Whites (advantaged group). Findings from these investigations show that people expect Blacks to be angrier than Whites (Hutchings & Haddock, 2008); are quicker to associate Blacks with threat compared to Whites (Correll, Urland, & Ito, 2006), even when these Black targets are merely children (Goff, Jackson, Di Leone, Culotta, & DiTomasso, 2014). Perceivers are also unable to distinguish angry and happy Black targets, despite a clear differentiation between happy and angry faces when the object of evaluation is White (Shapiro et al., 2009). Although these previous contributions are notable, they often allude to prejudice against Blacks as the primary (even sole) explanation for the association of the threat-inducing emotion of anger to Blacks relative to Whites despite the mixed evidence in the literature. For example, studies have shown that implicit racial biases predict the association of anger to Blacks (Ackerman et al., 2006)—and other racially threatening out-groups (e.g. Middle-Eastern Arabs) even at the neural level (Fleming, Bandy, & Kimble, 2010). However, a large-scale study comparing racial bias in fatal shootings across counties in the United States found that indicators of racial prejudice (e.g. racist norms, and racial assaults) were not reliable predictors of the differences in the greater threat appraisals (and consequent shooting) of ethnic minorities relative to Whites. Interestingly, Ross (2015) found that proxies of social status (such as the median income) were consistent and reliable predictors of racial bias in police shootings.

Notably, these previous studies fail to directly test the complementary assumption that higher status groups are associated with calm: assuming that calm is necessarily the opposite of anger, and that a positive effect on anger would always mean a negative effect on calm. Also, participants in majority of the studies within the “Black threat” paradigm conducted in the West (typically the US) are often Whites. Such a paradigm makes it likely that the effects observed in those studies could have resulted from the tendency to favour one’s own group on evaluative judgements by excusing one’s in-group from the image-tainting bestial (negative) emotions of anger (Tajfel, Billig, Bundy, & Flament, 1971). After all, evidence shows that bestial non-uniquely human emotions (like anger) are generally reserved for out-groups, not the in-group (Leyens et al., 2000).

To address these issues, we treated calm as a separate emotional dimension relevant to the hunchback stereotype because people can be angry, but could also chose to either restrain an expression of this emotion (i.e. calm) or to display it (i.e. rage) as the opening quote suggests. Specifically, we propose that the association of anger to low status is not restricted to the racial context of Blacks vs. Whites and, that lay perceivers would attribute anger to targets that signal a low status position and calm to targets that signal high status. Unlike the previous studies that have largely been conducted in the West, we situate our research in a different (collectivistic) cultural context in South-East Asia (Malaysia), testing the predictions derived from the hunchback stereotype in a third-party group that is unconnected to the interstatus context being evaluated.

The cultural dimension is important in the light of recent suggestions of a collectivistic cultural creed permitting only those with power and authority to display anger (Park et al., 2013). Thus, demonstrating that the hunchback heuristic is applicable even in a collectivistic culture would provide conclusive evidence of its existence rather than a biased test of it.

2. Study 1

This study was designed to generate stimuli that are fit for a rigorous test of the hunchback stereotype in the light of the methodological difficulties in previous research. For example, research on status-based emotional attributions has largely relied on an “imagination” paradigm in which participants are required to evaluate ‘unseen’ exemplars of high and low status group members based on a short written biography (e.g. Tiedens, Ellsworth, & Mesquita, 2000). Although this approach has the potential to produce strong “stereotype effects” due to the limited information on which perceivers are required to make their judgements, it nonetheless increases the possibility that judgements are based on category prototypes that may not adequately capture intra-category diversity. This makes it uncertain whether stereotypes that are tied to category prototypes also have a wider application to other members that do not neatly fit the “typical” member. Similarly, other approaches that have utilised a facial stimulus approach, using single images that are then manipulated to represent one group or the other (e.g. Fleming et al., 2010), do not address the diversity issue. Here, we adopt a multiple facial stimuli approach by generating a series of images for each category within the two interstatus contexts (skin-shade and race) to be sure that judgements are closer to the intended phenomenon in the real world.

Given the widespread preference for light skin compared to dark skin in South Asia and South-East Asia (Leong, 2006; Nadeem, 2014), we reasoned that people would accord high social status to those with a light skin than to those with a dark skin. This distinction is most prominent amongst the Indian ethnic group in Malaysia and we capitalised on this existing difference within the same racial group to control for possible differences due to inter-racial variability. We also selected a further interstatus context, concerning the historical relations between Blacks and Whites, in which the former social category is often perceived as undervalued relative to the latter one (Kluegel, 1990). Assuming our assumption that the social categories within these two interstatus contexts signal low and high status is correct, then light-skinned Indians should be seen as higher in status compared to dark-skinned Indians, and also Whites should be perceived as higher in status compared to Blacks. Given the present focus on facial images, we further reasoned that participants’ status rankings would likely be based on the extent to which they consider the images to be attractive. Consequently, we anticipated that status judgements would be positively related to the degree to which they consider images within each category to be attractive.

2.1. Method

2.1.1. Ethics

The programme of research reported in this paper received ethics approval from the Science and Engineering Research Ethics Committee (SEREC) at the University of Nottingham’s Malaysia campus. We adhered strictly to the ethical protocol enshrined in the British Psychological Society’s directive for the conduct of research involving human subjects. All participants provided informed consent digitally via Qualtrics’ online survey suite.

2.1.2. Participants

Thirty Malaysian students at the University of Nottingham’s Malaysia campus who responded to an email advert that was sent via the students’ mailing list took part in this study (10 were men and 20 were women, $M_{\text{age}} = 21.13$, $SD_{\text{age}} = 2.45$). Participants were compensated with RM5 (approximately US\$1.5) for their time.

Figure 1. Examples of face stimuli: dark-skinned Indian (A), light-skinned Indian (B), large Black (C) and slim Black (D), and large White (E) and slim White (F).



2.1.3. Design, stimuli and procedure

Participants were exposed to seven images of dark-skinned Indians, seven images of light-skinned Indians, 10 images of Blacks and 10 images of Whites (e.g. see Figure 1). We generated images of dark- and light-skinned Indians online using the search word “Indian faces”. The categorisation of the two Indian subgroups based on skin tone was then carried out by a trained research assistant of Indian origin. The Black and White facial stimuli were generated from a publicly available online databank (The Park Aging Mind Laboratory Face Database; Minear & Park, 2004). The images were then photo-edited into a flat grey background and “dressed” in plain black t-shirts in order to standardise clothing. Finally, to control for cross-gender effects, all the images that were presented to participants in the current and subsequent studies were those of men.

Participants were asked to provide repeated ratings of the perceived status and attractiveness for each facial stimuli on a seven-point scale (perceived social status: +3 = *high status*, -3 = *low status*; perceived attractiveness: +3 = *very attractive*, -3 = *not at all attractive*). Upon completion, participants were thanked and dismissed.

2.2. Results and discussion

2.2.1. Analytical strategy

First, we combined the status and attractiveness ratings within each category to obtain an index of perceived social status and, perceived attractiveness. For each interstatus context, we then calculated a paired *t*-test to establish the groups that participants considered to be relatively high or low in social status.

Results of this *t*-test corroborated our status assumptions across the two contexts and showed that light-skinned Indians were seen as higher in status than dark-skinned Indians ($\bar{d} = .95$, $SE = .15$, 95% CI = [.645, 1.260], Cohen's $d = 1.16$). Similarly, Whites were perceived as higher in status compared to Blacks ($\bar{d} = .37$, $SE = .11$, 95% CI = [.645, 1.260], Cohen's $d = .61$). Furthermore, although participants favoured light-skinned Indians compared to dark-skinned Indians in terms of perceived attractiveness ($\bar{d} = .62$, $SE = .13$, 95% CI = [.358, .880], Cohen's $d = .89$), this difference was absent in the context of Black versus Whites ($\bar{d} = .05$, $SE = .13$, 95% CI = [-.218, .318], Cohen's $d = .07$): suggesting that attractiveness may not be a strong determinant of social status in this context because these two (foreign) out-groups are remote from our Malaysian participants' everyday circles and hence the participants have little direct experience on the basis of which they could gauge their relative attractiveness. We offer this interpretation with caution, given the non-representativeness of the present sample.

To test the proposed link between social status and attractiveness in the current context of facial images, we regressed the perceived attractiveness scores on to the perceived social status scores. Results from this analysis showed a medium-to-strong positive relationship between perceived attractiveness and perceived social status for same category evaluations except for Whites (see Table 1). We reasoned, in retrospect, that the null pattern for Whites could have resulted because Malaysians generally perceive this group as higher in status given their colonial history with White Europeans. This tangible historical status, we reason, perhaps, overpowered a status assessment of this elite group based on superficial attributes (e.g. attractiveness). Thus, in our subsequent studies we focused on the light- vs. dark-skinned Indian context because it offers the clearest distinction between the two intergroup contexts in terms of both status and attractiveness.

Table 1. The relationship between attractiveness and social status perceptions across two interstatus contexts (Skin-shade and Race–Study 1)

Perceived status of ...	Perceived attractiveness							
	Dark-skinned Indians		Light-skinned Indians		Blacks		Whites	
	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]
Same category	.599** (.19)	[.313, 1.098]	.392* (.25)	[.010, 1.021]	.599** (.24)	[.393, 1.367]	.088 (.38)	[−.606, .948]
Opposite category	.048 (.22)	[−.384, .513]	.081 (.22)	[−.349, .535]	−.161 (.25)	[−.774, .267]	.136 (.35)	[−.480, .974]
R^2	.38**		.18 [†]		.34**		.03	

Note: Same or opposite category labels refer to the social category in the relevant column for each estimate.

[†] $p = .065$.

* $p \leq .050$.

** $p \leq .010$.

3. Study 2

In this study, we aimed to demonstrate that a flimsy status signal such as skin shade elicits greater attributions of anger to darker-skinned Indians and calm to lighter skinned Indians. Previous investigations have often focused on the emotional perceptions of members of groups that are involved in the interstatus context being evaluated (e.g. White participants making judgements of the emotional states of Whites vs. Blacks) with the potential for inter-category biases favouring one's own group relative to the out-group (Tajfel et al., 1971). This is important in the light of the literature on inhumanisation showing a tendency for people to attribute bestial (often negative) emotions to out-groups while reserving uniquely human (often secondary positive emotions such as calm) to the in-group (Leyens et al., 2000). Therefore, in the current study we focused on the emotional attributions of a third-party group (Chinese Malaysians) who are unconnected to the social category (light- and dark-skinned Indians) that would constitute the subject of their anger and calm attributions.

Furthermore, to circumvent the issue of methodological consistency, especially given the mixed evidence often obtained in studies adopting a cognitive approach (e.g. the Implicit Association Task [IAT]-Greenwald, McGhee, & Schwartz, 1998) to those adopting a self-report approach, we combined both implicit and explicit measurements to be sure of the robustness of the predicted patterns. After all, different methods of accessing the same underlying psychological phenomenon should produce similar effects on the intended outcome (Jost et al., 2012). If the hunchback stereotype exists, then it should take people less time to respond to a category/emotion pairing that is congruent to (or agrees with) the hunchback stereotype than to a category/emotion pairing that isn't, because cognitive processing tends to be quicker when information pairs are consistent than when they are not (MacLeod, 1991). Thus, to find evidence for the existence of a hunchback stereotype at the implicit (unconscious) level, people should be quicker in responding to a hunchback congruent pairing in which a dark-skinned Indian is paired with the emotion word ANGER and a light-skinned Indian is paired with CALM, compared to a hunchback inconsistent pairing in which a dark-skinned Indian is paired with CALM and a light-skinned Indian is paired with ANGER. We expected this effect to occur because perceivers should take less time to verify representations that conform to established stereotypes relative to those that do not (see Carreiras, Garnham, Oakhill, & Cain, 1996).

On the explicit measures, we expected greater anger attributions to dark-skinned versus light-skinned Indians and, greater calm attributions to light-skinned versus dark-skinned Indians. Given the focus on facial images, combined with the positive link between status and attractiveness that we established in Study 1, we further anticipated a link between anger/calm attributions and perceived attractiveness: those images that elicit strong attractiveness should be associated with less anger and greater calm.

3.1. Method

3.1.1. Participants

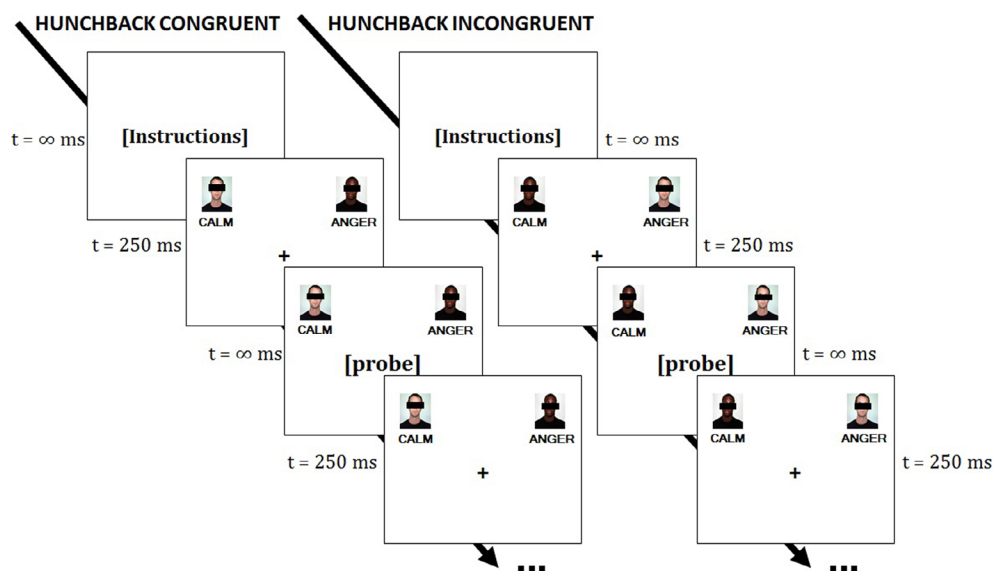
Eighty Chinese Malaysian participants at the University of Nottingham's Malaysia campus were recruited opportunistically to take part in the study (41 men and 39 women; $M_{\text{age}} = 20.89$, $SD = 1.58$). They were offered candies as compensation for their time.

3.1.2. Design and procedure

The experiment was comprised of two parts: a cognition probe task (CPT) that is similar to the traditional IAT set-up, and an explicit self-report component in which participants completed repeated measurements of anger and calm for a series of light- and dark-skinned Indian faces.

3.1.2.1. Implicit CPT measure. A within-subject design was used in which hunchback congruity was experimentally manipulated by pairing a light-skinned Indian or dark-skinned Indian face with the emotion ANGER or CALM. In the hunchback-congruent condition, we paired a light-skinned Indian face with the emotion word CALM and dark-skinned Indian face with the emotion word ANGER. These pairings were reversed in the hunchback incongruent condition so that the light-skinned Indian was paired with ANGER and the dark-skinned Indian was paired with CALM. These stimuli pairs remained constant on the top left and top right corners of the screen throughout each block of trials (see Figure 2). At the centre of the screen, participants were presented with a fixation cross for 250 ms, followed by a probe word that either matched or did not match with either of the emotion words presented in the stimuli pairs (see Figure 2). Participants were to decide which emotion word the probe word matched. The dependent variable was the time it took for them to reach this decision, with longer response latencies indicating interference in cognitive processing. Thus, quicker response latencies in the hunchback congruent (relative to incongruent) condition will provide evidence for the presence of a heuristic associating light-skinned Indians with "calm" and dark-skinned Indians with "anger". If this hunchback heuristic does not exist, then there should not be any interference and participants should spend no more time in matching the probe words to the target emotions in the hunchback incongruent condition than they do in the hunchback congruent condition.

Figure 2. Flow chart of the experimental protocol for hunchback congruent and hunchback incongruent conditions.



3.1.2.2. Explicit (self-report) measures. We used a within-subjects design in which participants provided repeated anger and calm ratings in relation to light-skinned and dark-skinned Indian faces. The dependent variable was participants' responses to scale items for each light-skinned and dark-skinned Indian, which asked them how angry- and calm-looking each face was. Responses were provided on a seven-point scale ($-3 = \text{not at all angry-looking}$, $+3 = \text{very angry-looking}$; $-3 = \text{not at all calm-looking}$, $+3 = \text{very calm-looking}$). Participants also provided their judgements of the attractiveness of each target ($-3 = \text{not at all attractive-looking}$, $+3 = \text{very attractive-looking}$), assuming that more attractive faces signal higher social status (see Owuamalam, Wong, & Rubin, 2016 for a similar use of attractiveness as an index of social status in a face stimuli paradigm).

3.1.3. Stimuli and apparatus

We used the same 7 "light-skinned" and 7 "darker-skinned" Indian faces that we generated in Study 1, which were then photo-edited into a flat grey background and "dressed" in plain black t-shirts. One light-skinned and 1 dark-skinned Indian faces were used in the CPT protocol; the other six were used in the explicit self-report measurements. We used 20 probe-word stimuli (10 were anger-associated, and the other 10 were calm-associated, see Appendix A; Nelson, McEvoy, & Schreiber, 2004). The CPT protocol was presented using Psychopy 1.70 (Peirce, 2007), while the explicit self-report ratings were presented via Qualtrics—an online survey suite.

3.2. Results and discussion

3.2.1. Status awareness check

To establish that participants perceived light-skinned Indians in the current study as high in status (in terms of physical attractiveness), we ran a paired t -test in which the difference between perceived attractiveness for the two groups was calculated. Results corroborated the evidence in Study 1 and showed that light-skinned Indians were perceived to be higher in status (more attractive) than dark-skinned Indians, $t(77) = -8.84$, $p < .0001$, ($\bar{d} = .68$, $SE = .08$, 95% CI = [.526, .833], Cohen's $d = 1.00$).

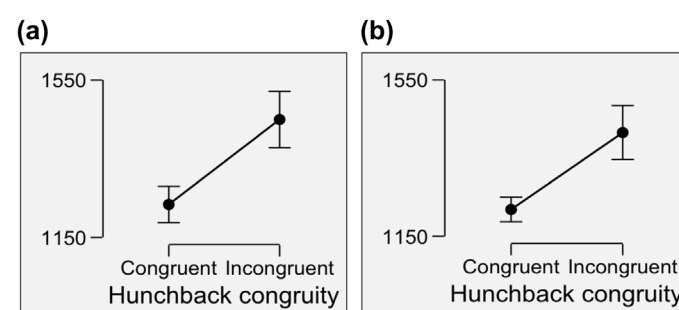
3.2.2. Implicit (CPT) data

Reaction times (RTs) were collated for the hunchback-congruent and hunchback-incongruent trials. We discarded corrupted data from four participants, and the error rate across all trials was low ($\leq 20\%$). Therefore, we used for our analysis only the RTs in trials with correct responses. Figure 3(a) and (b) depict the trends for anger and calm associations, respectively.

Consistent with the hunchback stereotypes, results from a paired t -test revealed that participants were quicker in matching the probe-word with the target emotion when the category/emotion word pairings were hunchback congruent, compared to when the pairings were hunchback incongruent. This was true for anger associations, $t(75) = -2.39$, $p = .019$, ($\bar{d} = -216$ ms, $SE = -90.31$ ms, 95% CI = [-396.100, -36.260], Cohen's $d = .28$), as it was for calm associations, $t(75) = -2.58$, $p = .012$, ($\bar{d} = -196.90$ ms, $SE = 76.26$ ms, 95% CI = [-348.800, -44.940], Cohen's $d = .30$).

Figure 3. Implicit associations of anger (a) and calm (b) in the cognition probe task. On the Y-axis are reaction times (ms) and on the X-axis are the hunchback congruity conditions for each emotional probe.

Note: Error bars are standard errors (Study 2).



3.2.3. Explicit (self-report) data

Corroborating the evidence from the implicit measures, paired *t*-tests that we conducted on the anger and calm measures revealed patterns that were consistent with the hunchback stereotype (see Table 2). Dark-skinned Indians were perceived to be more angry-looking compared to light-skinned Indian faces (see Table 2). In contrast, light-skinned Indians were perceived as more calm-looking compared to dark-skinned Indians (see Table 2).

To establish that these effects were tied to status, we ran a series of regression analyses in which we examined whether or not our index of status (attractiveness) predicted attributions of anger and calm for each light and dark-skinned Indians. To be sure that the associations between status (attractiveness) and anger and calm attributions were systematic (and not opportunistic), we included in each model, the perceived attractiveness scores for the opposite social category. Assuming perceptions of status (attractiveness) explains the attributions of anger vs. calm to targets within each category, then one should observe that perceived attractiveness predicts greater anger and less calm attributions to dark-skinned Indians, while the perceived attractiveness of light-skinned Indians does not. We anticipated the reverse of this pattern for light-skinned Indians. Results from this analysis corroborated the hunchback stereotype and revealed that the less attractive the dark-skinned Indian faces were perceived to be, the more angry-looking and less calm-looking they were also thought to be. Similarly, for light-skinned Indians, the more attractive they were perceived to be, the less angry-looking and more calm they were thought to be (see Table 3). Thus even within each social category, markers of social status determine the extent to which people relied on the hunchback heuristic in their anger and calm attributions.

Taken jointly the evidence from the implicit CPT, the explicit self-report measures and the direct evidence linking emotional attributions to markers of social status show clear support for the existence of a hunchback stereotype. Despite this strong evidence, there are reasons to approach the interpretation of these findings with caution given alternative accounts relating to (a) context, and (b) a racial prejudice hypothesis.

In relation to context, the Indian ethnic group is immersed in Malaysian society, and as a result, it is entirely possible that attributions of calm and anger are based on *actual* negative contact experiences of our Chinese Malaysian participants with Indian Malaysians—not a hunchback heuristic. According to the lay attribution theory (Kruglanski, 1990), people judge others on the basis of the constancy of their behaviour across different contexts. As Chinese Malaysians are more likely to encounter Indians (compared to distal out-groups such as Blacks and Whites), it seems possible that their attributions could embody the reality of their frequent negative encounters with this

Table 2. The main effects of status category on anger and calm attributions to targets

		Dark-skinned Indians		Light-skinned Indians		t-value		Cohen's d		[95% CI]	
Study 2	Anger	.12 (.09)		-.69 (.09)		9.58***		1.09		[.640, .976]	
	Calm	-.04 (.08)		.78 (.08)		10.56***		1.20		[.667, .977]	
Study 3		Blacks	Whites	F-value	η_p^2	[95% CI]	Large	Slim	F-value	η_p^2	[95% CI]
	Anger	.65 (.08)	-.79 (.08)	189.43***	.63	[1.228, 1.641]	.46 (.31)	-.59 (.08)	124.87***	.53	[.862, 1.234]
	Calm	-.28 (.08)	.68 (.07)	119.66***	.51	[-1.137, -.788]	-.30 (.08)	.70 (.07)	152.80***	.58	[-1.158, -.838]

Note: Means are presented outside the parenthesis while the standard error associated with each mean are presented within curved parenthesis.

*** $p \leq .001$.

Table 3. The relationship between perceived status (attractiveness) and attributions of anger and calm to dark- and light-skinned Indians (explicit measures, study 2)

Perceived attractiveness of ...	Emotional attributions							
	Dark-skinned Indians' anger		Light-skinned Indians' anger		Dark-skinned Indians' calm		Light-skinned Indians' calm	
	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]
Same category	-.414** (.14)	[-.657, -.103]	-.418** (.13)	[-.624, -.096]	.410** (.12)	[.079, .562]	.286 [†] (.13)	[-.021, .480]
Opposite category	.035 (.14)	[-.238, .300]	.094 (.22)	[-.189, .355]	-.117 (.12)	[-.323, .146]	.022 (.13)	[-.240, .276]
R^2	.15***		.13***		.11**		.09**	

Note: Same or opposite category labels refer to the social category in the relevant column for each estimate.

[†] $p = .072$.

* $p \leq .050$.

** $p \leq .010$.

*** $p \leq .001$.

demographic rather than a reliance on the fundamental hunchback heuristic that we propose. This reason seems seductive especially in the light of the evidence that negative (but not positive) contact experiences are stronger predictors of unfavourable characterisation of out-groups—the *contact caveat* (see Barlow et al., 2012).

Second, and following on from the first, it is entirely possible that an orientation towards prejudice against dark-skinned Indians explains the link between perceived status and attributions of anger and calm in this study. Given the association between dark-skinned Indians and menial jobs relative to their lighter skinned counterparts that are often associated with affluence and the business class (Sandhu, 1993), and because people who do “dirty” work are often dehumanised (Volpato, Andrighetto, & Baldissarri, *in press*), it is possible that an orientation towards prejudice against dark-skinned Indians could also explain the attribution of negative emotions (anger) but not positive emotions (calm) to them.

Thus, in the next study, we used another interstatus context (Blacks vs. Whites) to circumvent the contact issue because (a) we have previously established that the interstatus distinction between Black and White is apparent to our Malaysian participants, and (b) encounters with these two out-groups are relatively infrequent in Malaysian society, therefore reducing the possibility that a hunchback pattern in this context could be explained by the frequency of negative contact. That is, assuming people infer the traits (calm and anger) of others entirely based on how frequent they have observed others’ behaviour across situations, then such inferences should be harder to make the less frequent contact between people are.

In addition, we included a measure of an orientation towards prejudice in our next study to delineate the status-based hunchback heuristic that we propose from a racial prejudice account. If the effects in Study 2 were only due to prejudice, then an effect of perceived social status on anger and calm attributions that is mediated by the status signal (attractiveness) should cease to exist once the variance in anger and calm that is associated with a prejudice orientation is accounted for.

4. Study 3

We again used a multi-method approach combining implicit and explicit measures as we did in Study 2. Because stereotypes tend to be automatic judgements that are based on existing heuristics (Bargh, Chen, & Burrows, 1996), we reasoned, again, that perceivers should be quicker at matching words related to the emotions of anger and calm when they are exposed to a hunchback congruent pairing (i.e. a Black face/ANGER, and White face/CALM) compared to when they are exposed to a

hunchback incongruent pairing (i.e. a White face/ANGER, and Black face/CALM). We expected the same patterns that we observed on the explicit measures in Study 2 to also manifest here.

Additionally, we embedded another social category within the images of Blacks and Whites which related to the perceived physical sizes of the targets in terms of whether they are large or slim. Previous research has demonstrated that large people are perceived to be lower in social status compared to thin people (Crandall & Schiffhauer, 1998; Durante, Fasolo, Mari, & Mazzola, 2014; Owuamalam, Wong, & Rubin, 2016). If the hunchback pattern is robust then its predictions should also apply to a status category based on physical size: larger targets should be seen as angrier looking than slim targets and, slim targets should be seen as calmer looking compared to large targets.

4.1. Method

4.1.1. Participants

One-hundred and fourteen Malaysians at the University of Nottingham's Malaysia campus took part in this study (36 were men and 78 were women; $M_{age} = 19.40$, $SD = 1.39$). They were recruited via an email advert that was sent using the students' mailing list at this university. Participants received either course credit or a payment of RM5 (approximately US\$1.50) as compensation for their time.

4.1.2. Design and procedure

As in Study 2, the current experiment consisted of two parts: a cognition probe task (CPT) and an explicit self-reported rating of various outcomes including: anger and calm, and two correlates of anger, aggressiveness and dangerousness. The CPT was conducted before the explicit self-report task in order to reduce the salience of anger/calm associations, which might otherwise confound the CPT results.

4.1.2.1. Implicit (CPT) measure. We used an identical protocol to the one described in Study 2. Hunchback congruity was manipulated so that in the hunchback congruent condition, category/emotion-word pairings were White/CALM, Black/ANGER. In the incongruent condition, the pairings were reversed to White/ANGER, Black/CALM. The dependent measure, again, was the time (in ms) that it took participants to match a probe-word to the target emotion of ANGER and CALM while exposed to the hunchback congruent versus incongruent trials.

4.1.2.2. Explicit (self-report) measures. We used a 2 (racial status: Black versus White) \times 2 (physical size: large versus slim) repeated measures design in which participants rated the emotions of the faces of Black and White large and slim men. The dependent variables were participants' responses to scale items that were displayed in random order on screen and that measured the perceived calm and anger of the target faces (for anger: $-3 = \text{not at all angry-looking}$, $+3 = \text{very angry-looking}$; and for calm: $-3 = \text{not at all calm-looking}$, $+3 = \text{very calm-looking}$). Participants then completed a perceived status measure on which they made judgements of the social standing of each target within a social category ($-3 = \text{lowest status}$, $+3 = \text{highest status}$). They also gave their judgements of the attractiveness of each target within each social category ($-3 = \text{not at all attractive-looking}$, $+3 = \text{very attractive-looking}$).

4.1.2.2.1. Orientation towards prejudice. Theorists have proposed that the tendency to support social hierarchies and/or to hold ideologies that accept the dominance of certain groups over others causes racial prejudice (Sidanius & Pratto, 2001). For this reason, we measured an orientation towards prejudice using an eight-item hierarchy version of the social dominance orientation (SDO) scale, which examines people's preference for unequal relations between groups. The more people subscribe to this ideology, then, the more likely this orientation towards prejudice should explain the association of anger to low status and calm to high status. An example of items on the SDO scale included "Some groups of people are just more worthy than others". The reliability of this scale was good, $\alpha = .82$, 95% CI = [.759, .862].

On an exploratory basis, we also examined whether or not high status formal clothing (versus casual and hoodies) would soften the angry/aggressive perceptions of Black targets (Hayes, Lawless, & Baitinger, 2014). For this reason, some of the targets were photo-edited into formal suits (high status), and others into neutral clothing (plain t-shirt) or hoodies (low status). A hoodie was chosen as a low status clothing item given the association of this sort of clothing to gang subculture and violence (McLean, 2005).

4.1.3. Stimuli and apparatus

Participants were presented with eight emotionally neutral expression male face stimuli that we used in Study 1: four of these were images of Black men (2 large and 2 slim—see examples in Figure 1) and the other four were those of White men (2 large and 2 slim—see examples in Figure 1).

We used the same 20 probe-word stimuli that we used in Study 2 as synonyms of anger (10) and calm (10) in the current study. Although these probe-words produced the hunchback effects, there are still questions about whether the effects only relate to anger/calm associated probe-words, or whether the effects would emerge also on control probe-words that were unconnected to anger and calm. For this reason, we included 10 filler items (e.g. “define”, “maximum”, and “theory”) that we used as controls, reasoning that the hunchback interference should be most visible when the probe-words were associated with the hunchback relevant emotions of anger and calm (see Appendix A for a fuller list of filler items). These additional filler items also allowed us to disguise the experimental hypothesis. As in Study 2, stimuli relating to the cognition probe task were presented via Psychopy 1.70 (Peirce, 2007) while the explicit self-report measures were presented via Qualtrics.

4.2. Results and discussion

4.2.1. Status awareness check

We computed the difference in perceived social status between race and size groups. As expected, a repeated *t*-test showed that our Malaysian participants perceived White targets to be higher in social status compared to Black targets ($t = 6.18$, $\bar{d} = .60$, $SE = .10$, $p < .0001$, 95% CI = [.408, .793], Cohen's $d = .58$). They also perceived slim targets to be higher in status than larger targets ($t = 9.75$, $\bar{d} = .84$, $SE = .09$, $p < .0001$, 95% CI = [.671, 1.013], Cohen's $d = .91$). However, further analysis revealed that the attire manipulation did not neatly differentiate the three attire groups in terms of status and this variable was dropped from a subsequent analysis as a result.

4.2.2. Implicit (CPT) data

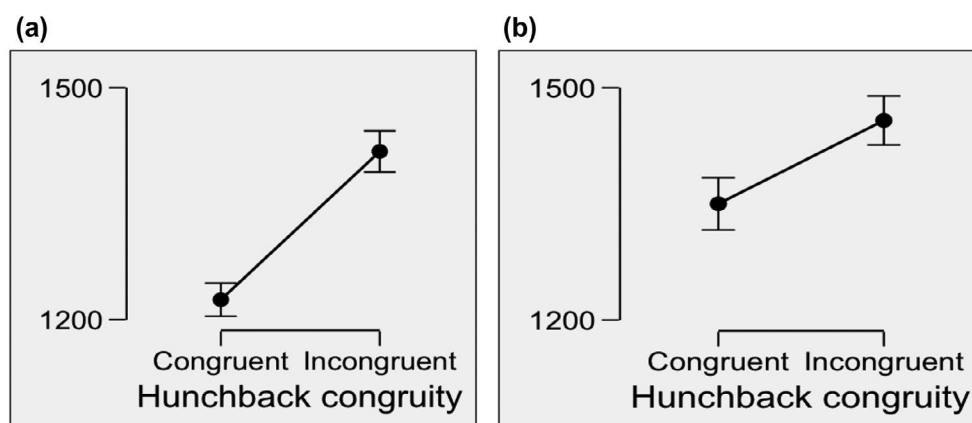
We collated participants' reaction times in milliseconds for the congruent trials by computing the mean reaction times relating to anger/probe-word associations (anger-congruent) and calm/probe-word associations (calm-congruent). The same procedure was repeated for the incongruent trials, resulting in anger-associated and calm-associated incongruent reaction times.

In a small number of trials (<20% on average), the probe-word was not accurately matched to anger or calm. This error rate was equally distributed between the congruent and incongruent trials for anger ($\bar{d} = 6.03$, $SE = 4.80$, $p = .218$) and calm ($\bar{d} = 7.35$, $SE = 4.32$, $p = .098$). Therefore, for each participant, we discarded inaccurate trials, assuming that participants were not paying attention. Hence, we used only reaction times that were related to correct responses.

Figure 4(a) and (b) depicts the reaction latencies in the hunchback congruent vs. incongruent conditions for anger and calm. Consistent with the hunchback hypothesis and refuting a criticism based on the contact caveat (Barlow et al., 2012), results from a paired *t*-test revealed that participants were quicker in their anger associations in the hunchback congruent condition compared to the incongruent condition ($t = -5.76$, $\bar{d} = -191.68$ ms, $SE = 33.30$ ms, $p < .0001$, 95% CI = [-257.700, -125.706], Cohen's $d = .54$). We also investigated the calm associations and found that participants were also quicker in the congruent trials compared to the incongruent trials ($t = -2.12$, $\bar{d} = -107.63$ ms, $SE = 50.67$ ms, $p = .036$, 95% CI = [-208.000, -7.235], Cohen's $d = .20$). We did not find any significant differences between the hunchback congruent and incongruent conditions for the filler control

Figure 4. Implicit associations of anger (a) and calm (b) in the cognition probe task. On the Y-axis are reaction times (ms) and on the X-axis are the hunchback congruity conditions for each emotional probe.

Note: Error bars are standard errors (Study 3).



items ($t = -.85$, $\bar{d} = -41.55$ ms, $SE = 49.17$ ms, $p = .400$, 95% CI = [-139.000, 55.861], Cohen's $d = .08$). Hence, the predicted effects emerged only when people made attributions that were related to the hunchback emotions of calm and anger.

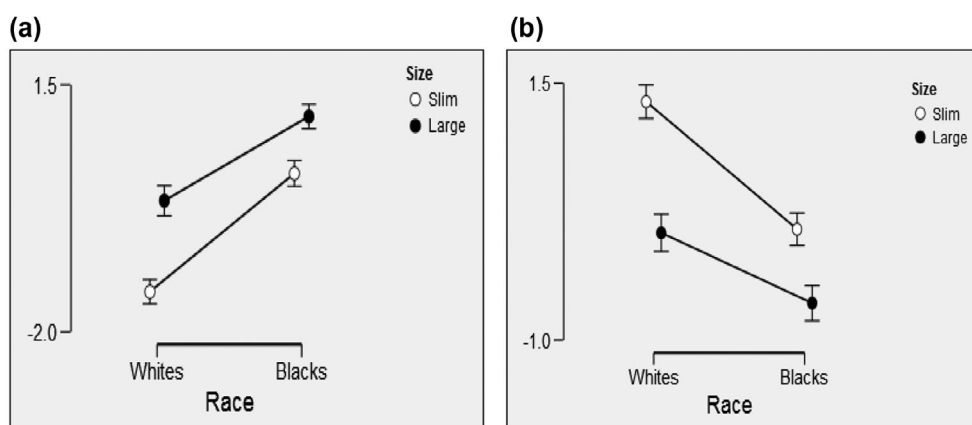
4.2.3. Explicit (self-report) data

We predicted a hunchback effect for the two categories of race and size. However, it is entirely possible that both status categories interact such that targets with “double devalued” social status (e.g. Blacks and large men) produce the strongest hunchback effect. For this reason, we performed a 2 (race: White vs. Black) \times 2 (physical size: large vs. slim) repeated measures ANOVA separately for anger and calm evaluations.

4.2.3.1. Anger attributions. Consistent with the hunchback hypothesis, and again refuting a criticism based on the contact caveat (Barlow et al., 2012), there were main effects of race and physical size: Black targets were perceived to be more angry-looking than the White targets, and large targets were perceived to be more angry-looking than slim targets (see Table 2). These main effects were qualified by a two-way interaction between race and physical size, $F(1, 113) = 6.63$, $p = .004$, $\eta_p^2 = .07$. Simple effect analysis revealed that this interaction did not eliminate the hunchback effect within race or size groups: Large Black targets were perceived to be more angry-looking than large White targets ($\bar{d} = 1.19$, $SE = .14$, $p < .0001$, 95% CI = [.913, 1.473], $\eta_p^2 = .39$; see Figure 5(a)) and, slim Black targets were perceived as more angry-looking than slim White targets ($\bar{d} = 1.68$, $SE = .12$, $p < .0001$, 95% CI = [1.430, 1.921], $\eta_p^2 = .62$; see Figure 5(a)). Also, there was a significant physical size effect within each racial group: Large targets were consistently rated as more angry-looking compared to slim targets, both for Blacks ($\bar{d} = .81$, $SE = .12$, $p < .0001$, 95% CI = [.578, 1.036], $\eta_p^2 = .30$; see Figure 5(a)) and Whites ($\bar{d} = 1.29$, $SE = .13$, $p < .0001$, 95% CI = [1.024, 1.554], $\eta_p^2 = .45$; see Figure 5(a)).

Figure 5. The interactive effect of race-based and size-based status on the attributions of anger (a) and calm (b) to targets. On the Y-axis are ratings of the relevant emotions and on the X-axis are the targets' social categories.

Note: Error bars are 95% confidence intervals (Study 3).



4.2.3.2. Calm attributions. Consistent with the hunchback hypothesis and contrary to a criticism based on the contact caveat (Barlow et al., 2012), there was a main effect of race in which White faces were perceived as more calm-looking than Black targets (see Table 2). There was also a main effect of size: Slim faces were perceived to be more calm-looking than large faces (see Table 2). Again, a race by physical size interaction emerged, $F(1, 113) = 10.32, p = .002, \eta_p^2 = .08$: Slim Whites were perceived as more calm-looking than slim Blacks ($\bar{d} = 1.24, SE = .12, p < .0001, 95\% CI = [1.014, 1.469], \eta_p^2 = .51$; see Figure 5(b)), and large White men were seen as more calm-looking than large Black men ($\bar{d} = .68, SE = .13, p < .0001, 95\% CI = [.423, .945], \eta_p^2 = .19$; see Figure 5(b)). When we investigated the simple effects of size within each racial group, we also found, consistent with the hunchback stereotype that, slim men were consistently viewed as more calm-looking than their larger counterparts and, this was true for Blacks ($\bar{d} = .72, SE = .11, p < .0001, 95\% CI = [.494, .945], \eta_p^2 = .26$; see Figure 5(b)) as it was for Whites ($\bar{d} = 1.28, SE = .12, p < .0001, 95\% CI = [1.033, 1.520], \eta_p^2 = .49$; see Figure 5(b)).

4.2.4. Do signals of social status predict anger and calm attributions?

To answer this question, first, we repeated the same regression as in Study 2, using perceived attractiveness to predict attributions of anger and calm. Corroborating the trends in Study 2, results in Table 4 show that perceived attractiveness of targets within each social category was associated with reduced perceptions of anger, but increased perceptions of calm. In other words, those targets that scored highly on the status signalling dimension of attractiveness were seen as more calm-looking, and less angry-looking, while the reverse was the case for their less attractive (low status) counterparts (see Table 4). We also found a pattern consistent with the hunchback stereotype when perceived attractiveness was substituted in the model with perceived social status: this was true for the Black vs. White interstatus context (see Table 5, Model 1), and also for the large vs. slim interstatus context (see Table 6, Model 1).

Recall that an assumption underlying the facial perception paradigm that we used across our studies is that perceived attractiveness is the metric that perceivers use to differentiate the facial images they saw into high and low social status. Thus, we reasoned that perceived attractiveness should be the conduit through which an effect of social status is passed on to anger/calm attributions. To be sure, we followed this reasoning with a mediational analysis, and specified a path from perceived social status to anger, calm and perceived attractiveness, and a further path from perceived attractiveness to anger and calm.

Results from this mediational analysis revealed two key findings. First, perceived attractiveness explained the link between perceived social status and anger/calm for the low status groups (see Tables 5 and 6, Model 1 for Blacks and large men). Consistent with the hunchback stereotype,

Table 4. The relationship between perceived attractiveness and attributions of anger and calm to blacks, whites, large and slim men (explicit Measures, Study 3)

Perceived attractiveness of ...	Emotional attributions							
	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]
Race	Blacks' anger		Whites' anger		Blacks' calm		Whites' calm	
Same category	-.384*** (.09)	[-.561, -.193]	-.203* (.10)	[-.383, -.007]	.325*** (.12)	[.142, .519]	.302** (.09)	[.100, .440]
Opposite category	.110 (.09)	[-.075, .289]	.088 (.10)	[-.104, .276]	.093 (.09)	[-.094, .280]	-.210* (.09)	[-.361, -.018]
R^2	.13***		.04		.14***		.09**	
Size	Large men's anger		Slim men's anger		Large men's calm		Slim men's calm	
Same category	-.371*** (.09)	[-.506, -.165]	-.200* (.10)	[-.391, -.001]	.431*** (.10)	[.236, .593]	.330*** (.09)	[.377, .831]
Opposite category	.018 (.09)	[-.164, .199]	.149 (.09)	[-.046, .321]	-.100 (.10)	[-.292, .087]	-.132 (.08)	[-.281, .052]
R^2	.13***		.04		.16***		.09**	

Note: Same or opposite category labels refer to the social category in the relevant column for each estimate.

* $p \leq .050$.

** $p \leq .010$.

*** $p \leq .001$.

decreased levels of perceived social status were associated with decreased perception of attractiveness ($\beta_{\text{Blacks}} = .30$, 95% CI = [.116, .467]; $\beta_{\text{large men}} = .44$, 95% CI = [.304, .676]), which in turn increased anger perceptions and reduced calm perceptions (see Tables 5 and 6, mediation model)—the opposite was true with increased levels of perceived social status.

Second, and consistent with the hunchback stereotype, signals of status in terms of perceived attractiveness explained the link between perceived social status and calm attributions to high status but only for slim targets and not for Whites. Increasing levels of social status were associated with greater perceptions of attractiveness of high status groups ($\beta_{\text{large men}} = .34$, 95% CI = [.191, .615];

Table 5. Regression analysis for the association between race-based status and attributions of anger and calm when attractiveness is a mediator (Study 3)

Predictors	Emotional attributions							
	Blacks' anger		Whites' anger		Blacks' calm		Whites' calm	
	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]
Model 1 (status perception)								
Same category	-.226* (.09)	[-.405, -.047]	-.206* (.11)	[-.452, -.023]	.329*** (.09)	[.148, .506]	.312*** (.10)	[.144, .527]
Opposite category	.061 (.11)	[-.145, .289]	.069 (.09)	[.112, .242]	-.007 (.11)	[-.226, .208]	.131 (.08)	[-.041, .274]
R ²	.05*		.04†		.11**		.13***	
Model 2 (mediation)								
DE of attractiveness (Att)	-.293** (.09)	[-.474, -.113]	-.118 (.10)	[-.304, .071]	.304*** (.09)	[.126, .482]	.116 (.08)	[-.051, .283]
IE of status via Att	-.088 (.04)	[-.184, -.029]	-.041 (.04)	[-.125, .024]	.089 (.04)	[.031, .192]	.044 (.04)	[-.012, .134]

Notes: DE = direct effect, IE = indirect effect. In the mediation model 95% CI are bias corrected bootstrapped estimates based on 1,000 simulations. Same or opposite category labels refer to the social category in the relevant column for each estimate. We adjusted for orientation towards prejudice (SDO) in the mediation model.

† $p = .051$.

* $p < .050$.

** $p < .010$.

*** $p \leq .001$.

Table 6. Regression analysis for the association between size status and attributions of anger and calm when attractiveness is a mediator (Study 3)

Predictors	Emotional attributions							
	Large targets' anger		Slim targets' anger		Large targets' calm		Slim targets' calm	
	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]	β (SE)	[95% CI]
Model 1 (status perception)								
Same category	-.291** (.09)	[-.478, -.105]	-.183† (.11)	[-.413, .009]	.356*** (.10)	[.188, .570]	.404*** (.09)	[.232, .603]
Opposite category	.026 (.10)	[-.174, .230]	.136 (.10)	[-.057, .334]	.076 (.10)	[-.119, .294]	-.086 (.09)	[-.254, .089]
R ²	.08**		.04		.15***		.15***	
Model 2 (mediation)								
DE of attractive- ness (Att)	-.269** (.09)	[-.443, -.095]	-.111 (.10)	[-.300, .079]	.270** (.09)	[.093, .447]	.182* (.08)	[.020, .343]
IE of status via Att	-.132 (.05)	[-.231, -.044]	-.030 (.03)	[-.099, .013]	.124 (.05)	[.033, .236]	.053 (.03)	[.013, .122]

Notes: DE = direct effect, IE = indirect effect. In the mediation model 95% CI are bootstrapped BCA based on 1,000 bootstrap simulations. Same or opposite category labels refer to the social category in the relevant column for each estimate. We adjusted for orientation towards prejudice (SDO) in the mediation model.

† $p = .060$.

* $p < .050$.

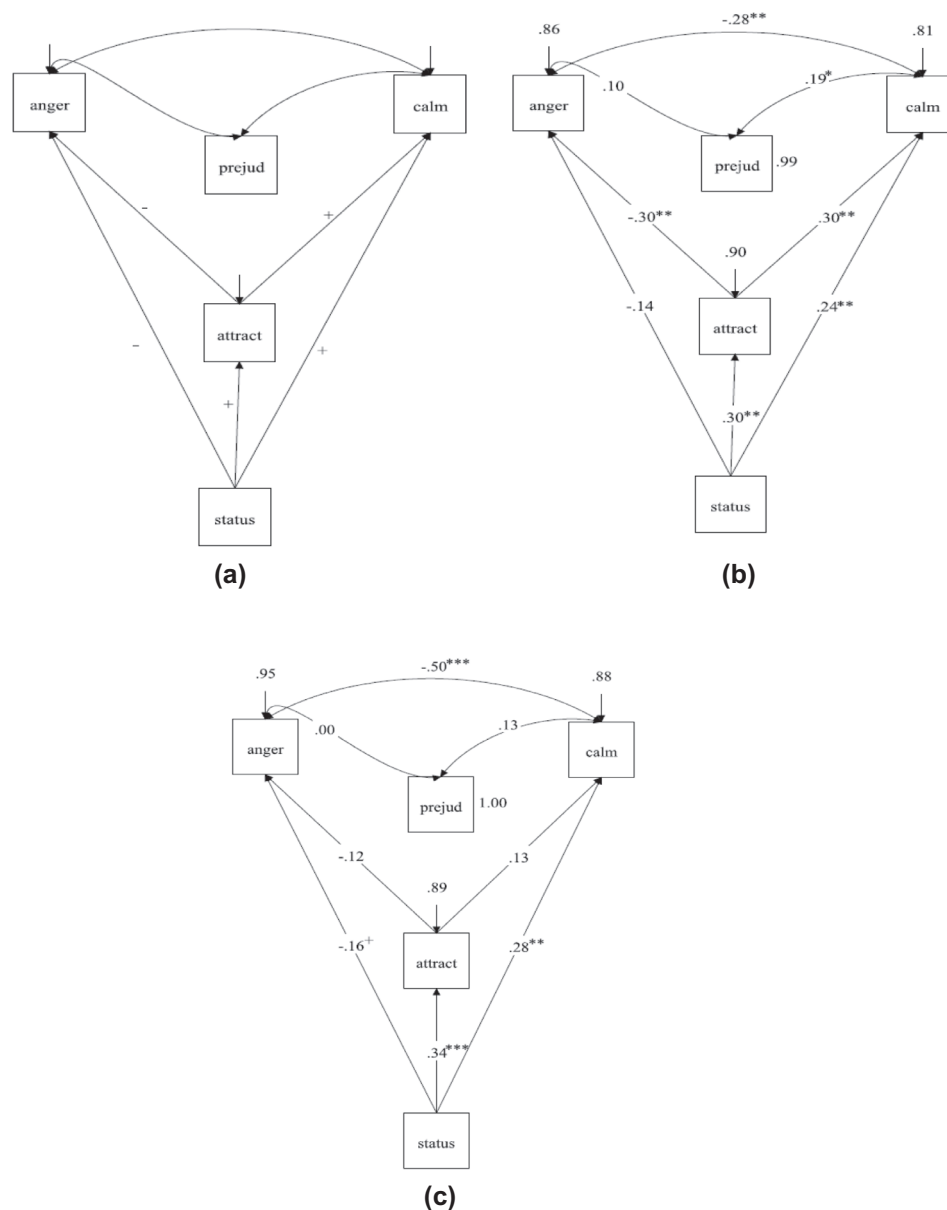
** $p < .010$.

*** $p < .001$.

$\beta_{\text{slim men}} = .27$, 95 CI = [.096, .502]), which then explained the calm attributions to slim men but not for Whites (see Table 6, mediation model and also Figure 6). This process did not account for the anger attributions to either of the two high status groups (see Table 6, mediation model) and suggests that attractiveness as one signal of social status is unconnected to perceivers' anger attributions to high status groups in this context. The fact that the attractiveness route does not explain the calm attributions to White men, again, could imply that superficial markers of social status are unconnected to calm associations to a high status group whose elevated position is not in doubt. After all, Malaysia was colonised by the (White) British making it likely that status connotations for this known "high status" out-group are based not on superficial status signals (like attractiveness) but, perhaps, more in terms of the perceived superiority of Western values to which Malaysians aspire. Note that this assumption is corroborated by the significant direct effect of social status on anger and calm of both Whites and slim men (see Tables 5 and 6, Model (1). Given the lack of history with Blacks, it seems intuitive that superficial signals of social status (such as attractiveness) sway Malaysians' attributions of calm and anger to this less known demographic.

Figure 6. The conceptual status model (a) and the statistical models (b-c) depicting the effect of status on anger and calm attributions to Blacks (b) and Whites (c) when attractiveness is a mediator.

Notes: Attract = perceived attractiveness, prejud = orientation toward prejudice.



4.2.5. But how does the status model compare with a racial prejudice explanation?

We have resolved the issue over the contact caveat. But an alternative account to the pattern of anger/calm attributions that we observed is that an orientation towards racial prejudice is responsible for it: especially in the light of vicarious exposure to racial prejudice against Blacks via the media. A racial prejudice hypothesis would assume greater contempt towards devalued groups, consequently decreasing perceptions of attractiveness of Blacks and increasing attractiveness of Whites. Accordingly, such dislike should weaken the attributions of calm to Blacks while strengthening calm attributions to Whites. Prejudice should also correspondingly weaken an association of anger to Whites, but should reverse this trend for Blacks. This is presumably because those who orient towards racial prejudice might more readily associate stigmatised groups with negative attributes (e.g. anger) but associate their non-stigmatised counterparts with positive attributes (e.g. calm). We compared the adequacy of this racial prejudice model of anger/calm attributions (Figure 7(a)) to our preferred social status account (Figure 6(a)) for Blacks and Whites. In each model, we controlled for the alternative hypothesis, by correlating social status with the residuals of calm and anger in the prejudice model and, correlating prejudice with the residuals of anger and calm in the status model.

In particular, we examined both an unconstrained model in which the paths and associated covariances were free to vary, and compared this with a constrained alternative in which the paths from the focal predictors to the outcomes were fixed to assume a valence that one would expect if the predictions of either the status (Figure 6(a)) or prejudice (Figure 7(a)) hypotheses were correct. Specifically, in the status model for Blacks and Whites, we fixed the status → anger path to assume a value less than zero; the status → calm path to assume a value greater than zero and the status → attractiveness path to assume a value greater than zero.

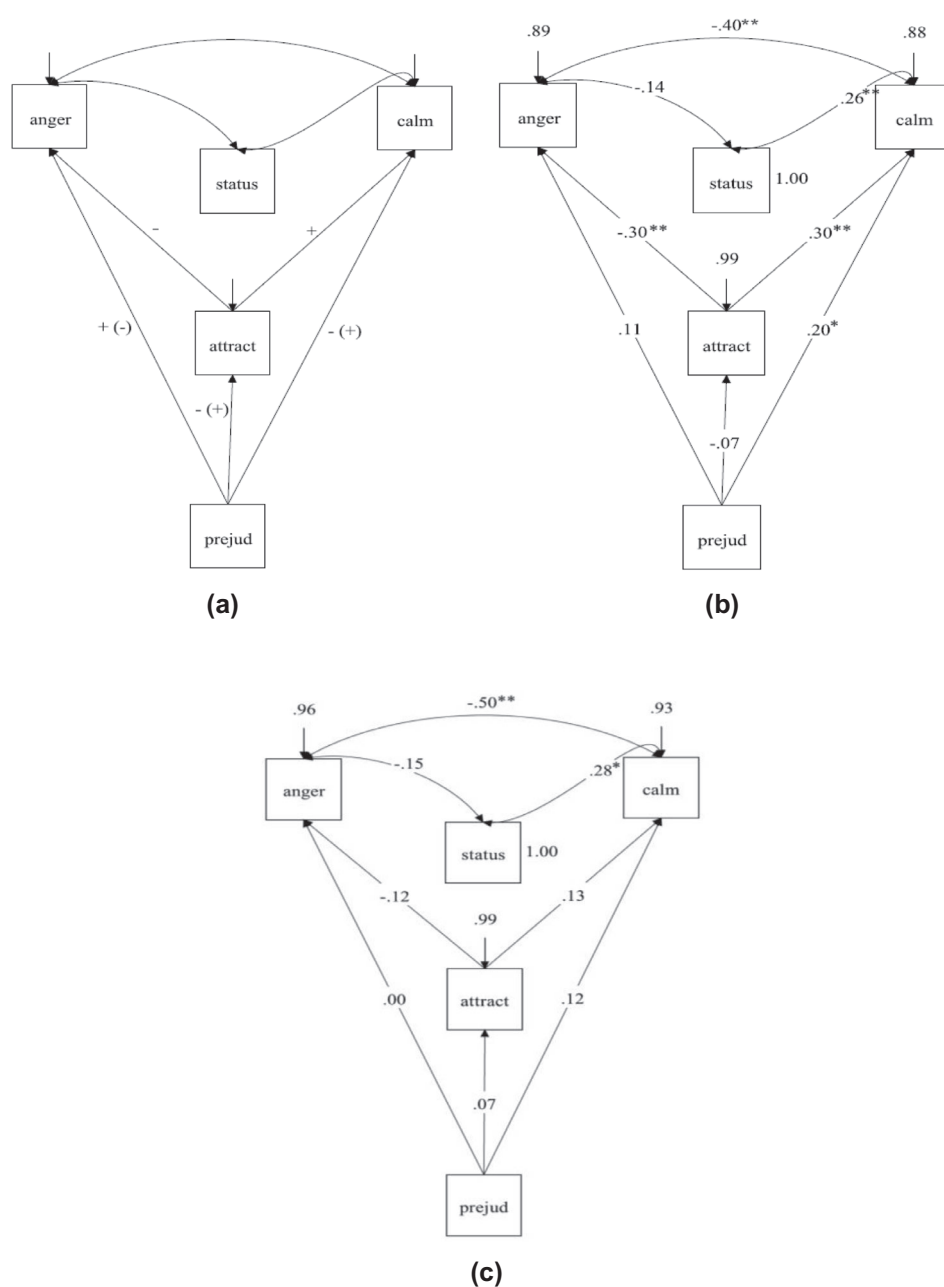
In the racial prejudice models, the path from prejudice orientation → anger was fixed to assume a value greater than zero for Blacks (but less than zero for Whites) because people who orient towards racial prejudice should attribute socially undesirable emotions to the stigmatised groups, but not to their higher status counterparts. Similarly, the path from prejudice orientation → calm was fixed to a value less than zero for Blacks (but greater than zero for Whites) consistent with the prejudice hypothesis. Finally, the path from prejudice orientation → attractiveness was fixed to assume a value less than zero for Blacks (but greater than zero for Whites) because people who orient towards racial prejudice should be more attracted to the dominant group but less attracted to their subordinated stigmatised counterpart. These analyses were performed using the maximum likelihood estimation and in MPlus version 7 (Muthén & Muthén, 1998–2015).

Table 7 presents the model fit results for these path analyses. The status models fitted the data extremely well for Blacks and Whites according to all the conventional indices of model fitness (Hu & Bentler, 1999)¹. In fact, the theoretically relevant paths in the constrained model were identical in valence to the unconstrained alternative for both Blacks and Whites, and unsurprisingly their model fit indices were the same, $\Delta AICs = .00$ (see Table 7—upper panel for each racial group; and also Figure 6(b) and (c)). In sharp contrast, none of the racial prejudice models for Blacks and Whites fit the data well (see Table 7—lower panel for each racial group, and also Figure 7(b) and (c)). This was true not only for the constrained models, but also for their unconstrained alternative (see Figure 7(b) and (c), and also Table 7—lower panel for each racial group). Interestingly, the prejudice model predicted greater (not reduced) expectations of calm for Blacks targets. In short, the status models fitted the data better than the prejudice models for Blacks and Whites (ΔAIC : Status model_{Blacks} vs. Prejudice model_{Blacks constrained} = 9.80; Status model_{Blacks} vs. Prejudice model_{Blacks unconstrained} = 15.15; Status model_{Whites} vs. Prejudice model_{Whites constrained} = 13.78; Status model_{Whites} vs. Prejudice model_{Whites unconstrained} = 13.78).²

In sum, the current study replicated and extended Study 2's findings on numerous fronts: (a) it presented direct and indirect evidence that status signals sway attributions of anger and calm in manners that are consistent with the hunchback stereotype; (b) it ruled out a criticism based on the

Figure 7. The conceptual prejudice model (a) and the statistical models (b–c) depicting the effect of orientation towards prejudice on anger and calm attributions to Blacks (b) and Whites (c) when attractiveness is a mediator. In Figure 7(a) the valence of paths from prejudice to anger and calm that are enclosed in parenthesis relates to Whites, while those outside parenthesis relates to Blacks.

Notes: Attract = perceived attractiveness, prejud = orientation towards prejudice.



contact caveat that the differential attributions of calm and anger could have been due to the frequency of actual negative encounters, insofar as identical results were obtained even for a low status group that our Malaysian participants were less experienced with (Blacks); (c) it ruled out an orientation towards racial prejudice as a plausible explanation for the trends in relation to the racial context of Blacks vs. Whites, (d) it showed that in the relatively mundane contexts of physical size or attractiveness, that use of the hunchback heuristic persists and finally (e) it showed that even within groups that are devalued, that signals of status (e.g. attractiveness) were sufficient to also prompt the use of the hunchback heuristic.

Table 7. Fit indices of theoretically relevant models in Study 3

	Model	χ^2 (df)	CFI	SRMR	RMSEA [90% CI]	AIC	Δ AIC
Blacks	Unconstrained status	.609 (2)	1.00	.018	< .001 [.000, .130]	1,247.950	.00
	Constrained status	.609 (2)	1.00	.018	< .001 [.000, .130]	1,247.950	
	Unconstrained prejudice	10.520** (2)	.868	.074	.193 [.090, .315]	1,257.750	5.347
	Constrained prejudice	15.867** (2)	.786	.087	.247 [.144, .366]	1,263.097	
Whites	Unconstrained status	.945 (2)	1.00	.025	< .001 [.000, .149]	1,251.227	.00
	Constrained status	.945 (2)	1.00	.025	< .001 [.000, .149]	1,251.227	
	Unconstrained prejudice	14.095** (2)	.804	.082	.230 [.127, .350]	1,265.002	.00
	Constrained prejudice	14.095** (2)	.804	.082	.230 [.127, .350]	1,265.002	

Notes: χ^2 = chi-square difference, df = degrees of freedom, CFI = comparative fit index, SRMR = squared root mean residual, RMSEA = root mean square error approximation, AIC = akaïke information criterion. Δ AIC values for each contrast that is ≥ 10 are considered meaningful (Burnham & Anderson, 2004).

** $p \leq .001$.

5. General discussion

The common wisdom is that threat perception and/or anger attributions to undervalued groups (particularly Blacks) are due to prejudice: individuals who orient towards prejudice generally perceive undervalued groups as being prone to the threat eliciting emotion of anger (see also Ross, 2015 for a similar discussion). Here we considered a more parsimonious status-based account: that a hunchback heuristic exists, which leads people to associate anger with low social status and calm with high social status. We reasoned that the hunchback stereotype would predict the expectations of anger and calm, respectively, from low and high status groups and found support for this proposition in a multi-method protocol comprising self-reports and a rigorous IAT-like implicit measure that taps unconscious cognitive associations. Our findings present a number of theoretical and practical opportunities.

5.1. Theoretical opportunities

While the predictions of the hunchback stereotype could be inferred from other theoretical accounts, it is important to distinguish between our approach and existing models of stereotyping. First, although the stereotype content model (SCM: Fiske et al., 2002) agrees with the hunchback stereotype in predicting the association of anger to low status and calm to high status, it is important to clarify that the SCM views these associations as being tied to trait incompetence, rather than a situation-related phenomenon that is tied to perceived frustration. That is, under the SCM framework people expect members of low status groups to be angry due to “trait” incompetence, and that this incompetence then frustrates the accomplishment of desired goals—making individual members of low status groups more likely to vent the frustration arising from their incompetence. The hunchback stereotype, by contrast, does not make any assumptions about traits. Rather, it supposes a generic tendency to associate people with low status with anger, because by definition, they are more likely to encounter frustration than their counterparts from privileged backgrounds. Creating conditions under which frustration is only attributable to internal (trait) versus external (situational) causes might be one fruitful way to differentiate as well as to integrate the SCM and the hunchback heuristic.

Second, the inhumanisation theory (Leyens et al., 2000) with its emphasis on the attributions of uniquely human (often positive) emotions to one’s in-group and bestial (often negative) emotions to out-groups seem similar to the hunchback stereotype—to the extent that people perceive their own groups as superior to out-groups. However, the problem with this reason is that people do not always see themselves as superior to out-groups. People may find it difficult, at times, to find an objective basis on which to claim superiority over a clearly higher status out-group—e.g. the context

between Malaysia and the USA (Spears, Jetten, & Doosje, 2001). As the infrahumanisation approach is more suited to in-group vs. out-group dyads, its predictions therefore do not neatly extend to an interstatus dyad and presents opportunities for an extension of the hunchback framework to an *intergroup* context.

Specifically, future research could aim to establish whether members of low status groups also use the hunchback heuristic in their attributions of anger and calm to the in-group vs. an out-group. As has been suggested by others (e.g. Spears et al., 2001), there often is an identity-based conflict within members of low status groups, between the need to service group interests, and a social reality that sets the boundaries for a group interested behaviour to manifest. While group interests might engender a tendency to *resist* an association of negative attributes to the in-group (such as the socially undesirable emotion of anger), it is entirely possible, on the other hand, that social reality could constrain the extent to which members of low status groups could claim positive attributes for their in-group (e.g. calm) relative to their higher status counterparts (see Spears et al., 2001; cf. Owuamalam, Rubin, & Issmer, 2016). Resolving this paradox warrants carefully unpacking the conditions under which the use of a group interested attribution strategy vs. an attribution strategy that yields to reality constraints is likely.

Third, there is also the outstanding issue of the cultural moderation hypothesis of status-based emotional expression put forward by Park et al. (2013). According to this perspective, a cultural creed exists in collectivistic cultures that permit only those in elevated positions of authority (i.e. high status groups) to express anger. Accordingly, people in collectivistic cultures expect members of high status groups to display anger because they are the ones to whom a licence is given to express this emotion. By extension, people in collectivistic cultures expect members of low status groups to be calm because their lack of authority denies them the licence to display anger. The problem with this proposition is that even in the collectivistic Malaysian culture, we found an association between low social status and anger, and between high social status and calm.

That said, the culture moderation hypothesis and the hunchback heuristic are not necessarily incompatible because we interpret the hunchback heuristic as a *fundamental heuristic* that people use in their social judgements, while the culture moderation hypothesis is ostensibly concerned with *norms* that may or may not proscribe reliance on the more fundamental heuristic. Thus, it is possible that in situations where such cultural norms are less salient (such as the mundane interstatus contexts that we used across our studies) that people may rely on the hunchback heuristic, while relying on norms in situations where the cultural norms prescribing the display of anger to those in elevated positions are more salient (e.g. managers vs. subordinates within an organisational context). This might help to explain the seemingly diverging evidence by Tiedens et al. (2000) to those reported by Park et al. (2013), which shows a similar tendency for people to expect anger from high status groups but within an *individualistic* culture and, in the cultural context of an organisation.

Finally, the gender paradox. Would the hunchback heuristic be applicable to the gender context where there are known norms that associate men with anger and aggression and women with calm and submission? We think the hunchback heuristic is potentially applicable even to the gender context, particularly in the light of the foregoing distinction between norms and fundamental heuristics. Accordingly, we reason that people with traditional beliefs about gender roles and norms may be more susceptible to adhering to societal norms that prescribe anger for men, and calm for women. Because we conceive the hunchback stereotype as a fundamental heuristic, we reasoned that those individuals who do not subscribe to traditional gender roles/norms may be more likely to resist normative associations of anger to men and calm to women, and might instead rely on the more hunchback heuristic. Not a single research has explored these novel propositions that are derivable via the lens of a hunchback heuristic, and we think it is a fruitful avenue for future research. Indeed, such a research programme, particularly in the gender context could help to understand the complexities of the *glass-ceiling/cliff* phenomenon (Baretto, Ryan & Schmitt, 2009). It is plausible that women do not get ahead not only because people at the upper echelons of an organisation

subscribe to rigid gender role norms that prescribe calm and submissiveness for women, but because people who do not subscribe to these norms may be driven by the fundamental hunchback heuristic: expecting women to be *emotionally leaky* and therefore making them “unfit” for elevated positions requiring calm. Nonetheless, we offer these speculations with caution because they have yet to be documented.

5.2. Practical opportunities

The current findings have far-reaching applied implications. Firstly, in the aftermath of police shootings of Blacks in the US, debates hovered around the issue of racial prejudice against ethnic minorities as a possible (even sole) explanation for the fatalities. While we acknowledge that racial (implicit) prejudice may play a role in explaining some of these incidence (see Welch, 2007), our analysis concurs with Ross (2015) and suggests that an orientation towards racial prejudice may not be the only (even primary) factor in the anger (threat) attributions to low status groups (such as ethnic minorities). Here, we uncover a more fundamental hunchback heuristic that people use to infer the anger of (and therefore possible threat posed by) those who occupy a low status position, which is largely unrelated to an orientation towards racial prejudice. That these associations persist even at the unconscious level that are less susceptible to control, suggests that a fundamental process is at work: the hunchback heuristic. Our novel status-based account becomes even more appealing, particularly when a closer look at scenes of some of these shootings also reveals the involvement of minority police officers. In particular, the finding that people rely on status signals such as physical size (cf., the case of Michael Brown in the 2014 Ferguson shooting) and markers of social stigma (cf., the socially undesirable hoodie worn by Tamir Rice in the Cleveland police shooting in 2014) in their attributions of anger underscores the complexity of threat perception. It further shows, consistent with our theorising, that perceived social status dictates who might (or might not) be a likely target of a threat-induced victimisation.

Second, the current findings have the potential to help understand the discourse around terrorism and law enforcement more broadly. Observers may perceive greater malice and violent intent from aggressive behaviour of members of low status groups compared to their counterparts from privileged higher status backgrounds. For example, the United States Federal Bureau of Intelligence (FBI) described the fatal shooting of African-Americans at a Church in Charleston South Carolina in 2015 that was perpetrated by Dylann Roof (who had ties to American white supremacists) as a “hate crime”: A term that ostensibly carries less severe connotations compared to the ‘terrorist’ label that intensifies a perception of wanton violence (Berman, Izadi, & Lowery, 2015). Meanwhile, ethnic perpetrators of the San Bernardino, California shootings in 2015 faced terrorism-related charges by the FBI (Sarlin, 2015). Indeed, the motivations for both atrocities seemed political, but with starkly different outcomes for the perpetrators. Note that this trend is also compatible with a recent social experiment in which the German pranksters “Dit Is Normaal” demonstrated that extreme verses from the Bible were perceived to be obscene and violent when people were told that those verses were from the Qur’an. In this sense, the hunchback stereotype has implications for the judiciary: behaviours that may be excused by jurors when it comes from individuals with a high status background, may be attributed violent and therefore criminal intent if it came from people with a low status background. It is important for law enforcement officers and conflict arbiters to be familiar with the hunchback heuristic, and to put a check on it.

5.3. Limitations

Despite the overwhelming evidence for a hunchback heuristic in this investigation, sceptics might nonetheless argue that vicarious exposure to the “angry and aggressive Black stereotype” via media depictions of Black people in violent/aggressive roles is responsible for the attributions of anger, in particular, to Blacks. Even if cherry-picking evidence in this manner is tenable, such an explanation is unsatisfying because (a) the majority of actors in Western media depicting violence and aggression are Whites by virtue of their numeric dominance of the Western movie industry (Smith, Choueiti, & Pieper, 2014), (b) such tendency should be more apparent amongst people who orient towards racial prejudice—but evidence in Study 3 show that this isn’t the case, that in fact such individuals

expect Blacks to be calm and (c) the regularity of the hunchback pattern across the other interstatus contexts leads to the overwhelming conclusion that emotional attributions were tied to status than anything else.

Nonetheless, we acknowledge that we have used only a proxy of racial prejudice in the shape of an orientation towards acting in this way, and a specific operationalisation of an orientation towards prejudice that isn't exhaustive. Thus, it is entirely possible that a different operationalisation of an orientation towards racial prejudice could yield a prejudice effect. That being said, different theoretical operationalisations of a construct should yield empirically similar outcomes (see Jost et al., 2012 for a similar argument) and the fact that we find no evidence for a racial prejudice hypothesis using an explicit measure raises important questions which future investigations on this topic could aim to resolve. Similarly, it might be fruitful to investigate the patterns we show across these studies in a Western context where proximal contact with Blacks (and Whites) is more frequent.

6. Conclusion

We examined the existence of a hunchback stereotype—the idea that lay perceivers associate anger with low social status and calm with high social status. Using a multi-method approach, we found evidence of a hunchback stereotype across numerous interstatus contexts including: skin-shade, race, physical size and attractiveness. We found these associations in a collectivistic culture where there are suggestions of a cultural creed permitting only high status individuals to express anger, strengthening our view that the hunchback stereotype is a fundamental heuristic. Our analyses ruled out the possibility that frequent encounters with the demographics studied here could have explained our results. In particular, we ruled out a racial prejudice account and showed that the associations of anger to Blacks and calm to Whites are unlikely to result primarily from an orientation towards prejudice, but from a “chip on the shoulder-like” heuristic that we call the hunchback stereotype.

Acknowledgements

We are grateful to the European Association of Social Psychology for a Seedcorn grant to the first author. We would also like to thank Soumya Ramakrishna Bhat for her assistance in data collection and stimuli preparation. The views expressed in this paper are those of the authors alone and those not necessarily mean that the European Association of Social Psychology endorse them.

Funding

This work was funded by the European Association of Social Psychology.

Competing Interests

The authors declare no competing interests.

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Citation information

Cite this article as: Chip on the shoulder? The hunchback heuristic predicts the attribution of anger to low status

groups and calm to high status groups, Chuma Kevin Owuamalam, Maas Misha'ari Weerabangsa, Jaya Kumar Karunagharan & Mark Rubin, *Cogent Psychology* (2016), 3: 1210998.

Notes

1. According to Hu and Bentler (1999), good fitting models should have a comparative fit index (CFI) value close to .95; root mean square error of approximation (RMSEA) value close to .06; standardised root mean square residual (SRMR) value close to .08 and a non-significant chi-square value.
2. Because the hypothesised and alternative models are not nested, we used change in Akaike information criterion (ΔAIC) for model comparison. A lower AIC signals a better fit, and ΔAIC values ≥ 10 are regarded as meaningful (Burnham & Anderson, 2004).

Cover image

Source: Author.

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Appendix A

List of word stimuli used in Studies 2 and 3.

Table A1. Emotion-associated probes in Studies 2 and 3

Calm-associated	Anger-associated	Non-associated (filler)
Passive	Fierce	Activity
Relax	Vent	Junior
Tame	Violent	Quarter
Still	Revenge	Zipper
Peace	Irritate	Define
Peaceful	Tantrum	Maximum
Patience	Jealousy	Theory
Subtle	Aggravate	Genuine
Patient	Mean	Nitrogen
Soothe	Frustrate	Wonderful

Note: Calm and anger columns in Studies 2 and 3, and non-associated column in Study 3.



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