


The thick skin bias in judgments about people in poverty

NATHAN N. CHEEK *

Department of Psychology, Princeton University, Princeton, NJ, USA

ELDAR SHAFIR

Department of Psychology and School of Public and International Affairs, Princeton University, Princeton, NJ, USA

Abstract: We present a series of studies documenting what we call a ‘thick skin bias’ in people’s perceptions of those living in poverty. Across a wide range of life events, from major to minor, people of lower socioeconomic status (SES) are systematically perceived as being less harmed by negative experiences than higher-SES people, even when this is patently false. In 18 studies, including a pre-registered survey of a nationally representative sample, we find that laypeople and professionals show the thick skin bias. We distinguish the bias from a tendency to dehumanize those in poverty and argue it cannot be attributed to the belief that the mere expectation that bad things will happen buffers people in poverty from suffering. The thick skin bias has potentially profound implications for the institutional and interpersonal neglect of those most in need of greater care and resources.

Introduction

Socioeconomic status (SES) shapes the cognitive, social and institutional experiences of everyday life. It influences where and how people spend their time, with whom they interact and the content and quality of their thoughts (Kraus *et al.*, 2011; Fiske & Markus, 2012; Shah *et al.*, 2012). Evidence across the social and behavioral sciences reveals that people living in poverty face widespread interpersonal and institutional neglect and exclusion: from mental and physical health care, financial access and legal resources, to educational opportunities, access to public goods, customer service and everyday social interactions, low-SES people are treated less well and with less interest, empathy and attention (Ehrenreich, 2001; Lott, 2002; Wolch *et al.*, 2005; Kugelmass, 2016; Croizet *et al.*, 2017). Higher-SES individuals not only

* Correspondence to: Department of Psychology, Princeton University, Princeton, NJ 08544, USA.
Email: nncheek@princeton.edu

obtain better outcomes in most walks of life, they also – although they need it less – receive more attention, better treatment and more support than lower-SES individuals, even when such preferential treatment is neither strategic nor profitable, nor even intentional.

Behavioral science offers several explanations for why people in poverty are systematically neglected and mistreated. Beyond Hobbesian analyses based on pure self-interest, research on attitudes towards those in poverty, and towards inequality more generally, has focused on system-justifying ideologies, such as belief in a just world, and on perceptions emanating from a Protestant work ethic concerning the ‘undeserving poor’ (Cozzarelli *et al.*, 2001; Durante & Fiske, 2017). Prominent accounts suggest that inequality is made more tolerable when poverty is attributed to the irresponsibility, ineptitude or laziness of low-SES individuals, whom people perceive not only as less competent, but even as ‘less human’ (Lott, 2002; Bullock, 2013; Loughnan *et al.*, 2014; Hunt & Bullock, 2016).

The present article moves beyond these perspectives to investigate people’s perceptions of the distress felt by low-SES individuals. Specifically, we compare how people perceive various effects of hardship and trauma experienced by those living in poverty as opposed to plenty. Across more than a dozen studies, we test the prediction that people perceive the poor as experiencing less discomfort, less frustration and less emotional damage than the rich in the same situations. We label this pattern of judgments the ‘thick skin’ bias: people view poverty as hardening those who are poor and increasing their tolerance for negative events and emotional turmoil.

Like other biases (Tversky & Kahneman, 1974), the thick skin bias likely originates from lay beliefs that are sometimes correct; namely, the idea of adaptation – the notion that things will be experienced partly based on prior exposure and expectations (Helson, 1964). However, also like other biases, this intuition systematically fails and can produce predictable errors, with potentially harmful consequences. Research suggests that past trauma, rather than buffering people, makes them more vulnerable, and often exacerbates the effects of future trauma (Breslau *et al.*, 1999; Garfin *et al.*, 2015). It is well documented that low-SES individuals experience more frequent and more severe negative life events, lower well-being and more chronic and acute pain, stress and mental illness (Turner *et al.*, 1995; Smith, 1999; Rosenman, 2002; Green *et al.*, 2006; Blythe, 2010; Evans & Kim, 2012). Although it is true that people manage to adapt to challenging life circumstances, research does not support the contention that experiencing serious hardship buffers people against future hardships, including incivility, mistreatment or daily mishaps and stressors. Contrary to the thick skin assumption, lower-SES individuals, who experience greater and more frequent stress,

with less access to resources and support, grow increasingly less able to cope, and are likely to experience similar negative life events *more* intensely than higher-SES individuals (Bucchianeri *et al.*, 2014; Evans & Cassells, 2014; Barwood *et al.*, 2017).

Preliminary support for the proposed thick skin bias comes from research by Hoffman and Trawalter (2016). They found that perceptions of hardship mediated the effect of race on judgments of physical pain: participants in their studies believed that Black individuals felt less pain than White individuals in the same situations, and this was correlated with the belief that the former had experienced more emotional, financial and interpersonal hardship than the latter. Further research, however, suggests that myths about the superhuman abilities and attributes of the Black body (Waytz *et al.*, 2015; Hoffman *et al.*, 2016), as well as low-level perceptual failure to detect pain on darker-skinned faces (Mende-Siedlecki *et al.*, 2019), further contribute to racial biases in pain perception. Race-specific physical pain biases are thus attributable to a legacy of slavery and mythological beliefs about Black bodies, as well as to low-level perceptual biases, beyond mere perceptions of hardship.

In what follows, we demonstrate a thick skin bias that leads people to perceive the poor as less affected by negative events across many life domains, particularly events that cause emotional pain. We further demonstrate that this bias cannot be explained by dehumanization, a notion sometimes used to account for racial biases in pain perception (Trawalter & Hoffman, 2015; Waytz *et al.*, 2015), or by the belief that low-SES individuals are less affected than higher-SES individuals by negative events simply because they are more likely to expect them. Participants in our studies displayed the thick skin bias when judging the experiences of both adults and children, as well as the experiences of White, Black, Latinx and Asian individuals, and we find strong evidence for the bias in a nationally representative US sample, as well as in judgments from professionals working in customer service, in mental health and in educational contexts. For each study, we report all measures, manipulations and exclusions, and all materials, data and code are available through the Open Science Framework (<https://osf.io/xqgu9/>).

Studies 1a–1d: preliminary demonstrations of the thick skin bias

Our first studies presented participants with vignettes, accompanied by a photograph, describing individuals “born and raised in a large city in the U.S.” who were either lower- or higher-SES. Participants rated the extent to which they thought each individual would be affected by various negative events. Our hypothesis was that low-SES individuals would be perceived as less harmed by those negative events than their higher-SES counterparts.

The first four studies followed an identical procedure; only the race of the individuals described in the vignettes differed across studies.

Method

Participants

Participants in Studies 1a–1d were recruited from Amazon’s Mechanical Turk (MTurk) platform using TurkPrime (Litman *et al.*, 2017). Sample sizes are reported in Table 1. All participant demographics, which did not reliably moderate any of the effects, are reported in the Supplemental Materials. To be included in the analyses, participants had to pass an attention check question and confirm that they had not responded randomly.

Materials and procedure

In a design adapted from Hoffman and Trawalter (2016), participants were presented with a description of a target individual named Jordan. In Study 1a, the description was accompanied by a picture of a face showing Jordan to be a White man or a White woman, whereas in Studies 1b, 1c and 1d, Jordan was shown to be a man or woman who was Black, Asian or Latino/Latina, respectively. All face pictures were from the face databases assembled by Minear and Park (2004) and Ma *et al.* (2015). Participants in the low-SES condition read that Jordan struggled financially:

This is Jordan. He [she] was born and raised in a large city in the U.S. Jordan has experienced many financial difficulties in his [her] life. He [she] and his [her] siblings were raised by parents who struggled to find steady work to pay the bills. Jordan’s family is financially unstable; they often struggle to have enough money for food, rent, or other basic things.

Participants in the high-SES condition read about Jordan living a life with no financial struggles:

This is Jordan. He [she] was born and raised in a large city in the U.S. Jordan has not experienced any financial difficulties in his [her] life. He [she] and his [her] siblings were raised by parents who comfortably supported them by working well-paying jobs. Jordan’s family is financially stable; they never struggle to have enough money for food, rent, or other basic things.

Participants were then presented with 11 negative life events that ranged from relatively mild to more severe (e.g., “Jordan orders takeout and is given an overcooked, badly seasoned entrée”; “Jordan is mocked and insulted by his [her] boss”; “Jordan’s heating system breaks, leaving him [her] without any heat in the middle of winter”; “A police officer mistakenly believes he sees Jordan shoplifting and doesn’t believe him [her] when he [she] says he [she]

Table 1. Descriptive statistics and analyses from Studies 1a–1d.

Study	<i>n</i>	Target race/ ethnicity	Low-SES condition	High-SES condition	<i>t</i> -test
Study 1a	214	White	<i>M</i> = 5.95, <i>SD</i> = 1.65	<i>M</i> = 7.69, <i>SD</i> = 1.45	<i>t</i> (212) = 8.25, <i>p</i> < 0.001, <i>d</i> = 1.13, 95% CI = 0.82–1.43
Study 1b	209	Black	<i>M</i> = 5.98, <i>SD</i> = 1.76	<i>M</i> = 7.82, <i>SD</i> = 1.39	<i>t</i> (202.57) = 8.43, <i>p</i> < 0.001, <i>d</i> = 1.16, 95% CI = 0.84–1.46
Study 1c	210	Asian	<i>M</i> = 5.86, <i>SD</i> = 1.81	<i>M</i> = 8.03, <i>SD</i> = 1.36	<i>t</i> (195.08) = 9.81, <i>p</i> < 0.001, <i>d</i> = 1.35, 95% CI = 1.02–1.67
Study 1d	222	Latinx	<i>M</i> = 6.09, <i>SD</i> = 1.60	<i>M</i> = 7.97, <i>SD</i> = 1.56	<i>t</i> (220) = 8.88, <i>p</i> < 0.001, <i>d</i> = 1.19, 95% CI = 0.88–1.50

Note: Before exclusion based on failure of an attention check and indication of random responding, sample sizes for Studies 1a–1d were 227, 251, 250 and 251, respectively. Where degrees of freedom are fractionated, we used Welch’s *t*-test due to unequal variances.

CI = confidence interval; SES = socioeconomic status.

didn’t do it”). On a 0–10 scale, with higher numbers indicating greater severity, participants rated how ‘upsetting’, ‘annoying’, ‘intolerable’ or ‘hurtful’ they thought the individual would find each event (see Supplemental Materials for all events and rating questions). Finally, participants’ ratings were averaged to create a perceived-harm index for each target individual (α -values > 0.87).

Results

As a manipulation check, participants were prompted at the end of each study to recall Jordan’s name and whatever information they could remember about Jordan. In studies with recall prompts, most participants (>80%) recalled the name and information presented, suggesting our SES manipulations were effective.

Descriptive statistics and *t*-tests for Studies 1a–1d are presented in Table 1. In all four studies, participants perceived low-SES individuals to be less affected by the same negative events than their higher-SES counterparts (all *p*-values < 0.001, all *d*-values > 1.00). In all four studies, as well as in all ensuing studies, the gender of the target did not moderate the effect of SES (all *F*-values < 1); accordingly, for these and all remaining studies, we collapse across target gender conditions (see Supplemental Materials for analyses with target gender).

Discussion

Studies 1a–1d provide initial evidence consistent with a thick skin bias: participants thought that low-SES individuals would be less harmed by negative

events than higher-SES individuals. This pattern of results, however, could be explained by mechanisms other than a thick skin bias. In the next three studies, we rule out three possible alternative explanations: (1) that the effect is driven mostly by perceptions of the rich; (2) that the effect is explained by dehumanization; and (3) that the effect is explained by the belief that negative events are more expected by, and therefore less harmful to, people in poverty.

Studies 2–4: ruling out alternative explanations

Study 2: poverty toughens and affluence weakens

A possible explanation for the results above is that, rather than believing that poverty toughens people, people believe that affluence weakens them. That is, perhaps participants think that high-SES individuals are more vulnerable to harm than the average person, not that low-SES individuals are less vulnerable. To test this possibility, Study 2 replicated Studies 1a–1d with the addition of a neutral target about whom no SES-relevant information was provided.

Method

A total of 501 participants were recruited through MTurk, of whom 336 met the inclusion criteria, which were the same as in the previous studies. The materials and procedure for Study 2 were identical to those of Study 1a, except that we added an additional condition, in which a target was given a neutral description, lacking any SES-relevant information: “This is Jordan. He [she] was born and raised in a large city in the U.S.”

Results

Participants thought that the three targets – low-SES, neutral and high-SES – would be affected differently by the negative events ($F(2, 333) = 36.79$, $p < 0.001$) (see [Figure 1](#)). Contrasts indicated that, as in Studies 1a–1d, participants thought the low-SES target would be less affected by the negative events ($M = 6.03$, $SD = 1.85$) than the high-SES target ($M = 7.90$, $SD = 1.58$; $t(333) = 8.58$, $p < 0.001$, $d = 1.09$, 95% confidence interval (CI) = 0.79–1.39). Importantly, participants thought the neutral target ($M = 6.97$, $SD = 1.41$) would not only be less affected by the negative events than the high-SES target ($t(333) = 4.31$, $p < 0.001$, $d = 0.62$, 95% CI = 0.35–0.89), but would also be more affected by the events than the low-SES target ($t(333) = 4.35$, $p < 0.001$, $d = 0.57$, 95% CI = 0.30–0.84). This suggests that the earlier findings were not driven solely by perceptions of the rich. Instead, the thick skin bias appears to minimize the perceived impact of negative events on low-SES individuals and to magnify it on those of higher SES. Whereas the

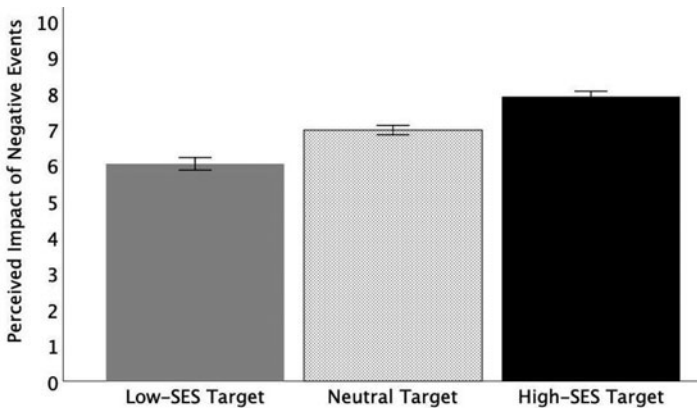


Figure 1. Effect of target socioeconomic status (SES) on perceived impact of negative events in Study 2.

Note: Error bars indicate the standard error of the mean.

presumed hardships of poverty seem to harden the poor, the apparent absence of hardship is thought to leave the rich more vulnerable.

Study 3: Dehumanization and positive events

Several accounts addressing perceptions of the poor emphasize dehumanization – the perception that individuals in poverty are limited to diminished forms of human emotion and experience (e.g., Loughnan *et al.*, 2014). Accounts of racial biases in the perception of physical pain similarly appeal to mechanisms of dehumanization (e.g., Waytz *et al.*, 2015). If dehumanization underlies our findings – that is, if participants are generally attributing weaker emotional experience to low-SES individuals – then we should expect participants to attribute weaker sentiments to these individuals in both negative and positive domains (i.e., for both negative and positive emotions). If, instead, people are rating the reactions of low-SES individuals based on their perceived prior hardship, then we might expect people to perceive the poor as less impacted by negative events, but perhaps even more elated than the rich when events turn out positively.

Method

We recruited 225 participants through MTurk, of whom 195 met the same inclusion criteria as in the previous studies. The materials and procedure were the same as in Study 1a, except that participants rated their perception of the effects of positive rather than negative events on a high- or low-SES

individual. There were 12 positive events (e.g., “Jordan’s boss compliments his [her] recent work”; “Jordan is going on a vacation to the beach with his [her] family”; “Jordan receives a surprise gift from a friend”; $\alpha = 0.90$; see Supplemental Materials for all events).

Results

Participants perceived low-SES individuals as more deeply affected by the positive events ($M = 8.16$, $SD = 1.13$) than high-SES individuals ($M = 7.41$, $SD = 1.41$; $t(193) = -4.12$, $p < 0.001$, $d = -0.59$, 95% CI = -0.88 to -0.30) (see Figure 2). If low-SES individuals were simply dehumanized, we would expect participants to attribute weaker sentiments to them in both positive and negative circumstances. Instead, in line with perceptions of a thick skin (“the ability to keep from getting upset or offended,” *The Merriam-Webster Dictionary*), participants, who rated low-SES individuals as less impacted by negative events, did not expect the same insensitivity when events were positive. In fact, contrary to dehumanization, they thought that low-SES individuals would be *more* impacted by positive life events – that they would experience stronger positive emotions – than those of higher SES.

Study 4: equally unexpected events

Perhaps, rather than a thick skin bias, participants’ judgments simply reflect a belief that negative events are more normative for the poor than for the rich. That is, participants may believe that bad things that befall people in poverty are often ‘to be expected’, and that this expectation reduces their impact. In Study 4, participants again rated how distressed a high-SES or low-SES individual would be by a variety of negative life events. This time, however, half of the events were normed (by a separate group of participants) as *equally unexpected* for both the poor and the rich (for details, see Supplemental Study 1).

Method

We recruited 302 participants through Prolific Academic, of whom 286 met the inclusion criteria (passing two attention check questions and confirming non-random responding). Participants rated how harmed a high-SES or low-SES individual would be by ten negative events. Five of these events were normed to be equally unexpected for both individuals (e.g., “Jordan is crossing the street in the main part of the city and is almost clipped by a speeding car”; $\alpha = 0.73$), whereas the other five were normed to be more expected for lower-SES individuals (e.g., “Jordan attends a city council meeting for the first time and is not given a chance to speak”; $\alpha = 0.75$; see Supplemental Materials for all events).

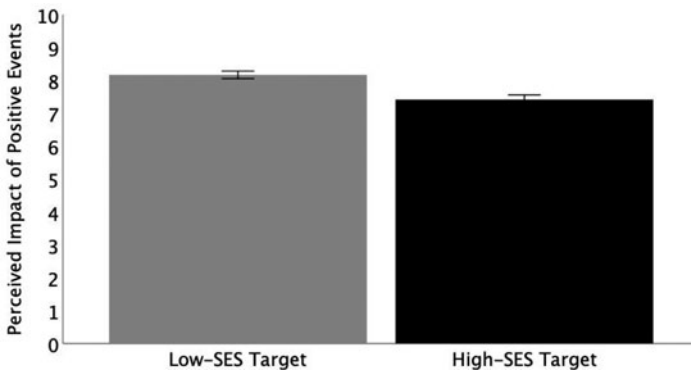


Figure 2. Effect of target socioeconomic status (SES) on perceived impact of positive events in Study 3.

Note: Error bars indicate the standard error of the mean.

Results

Participants thought that the low-SES target would be less negatively affected by the equally unexpected events ($M = 6.61$, $SD = 1.59$) than the high-SES target ($M = 8.03$, $SD = 1.53$; $t(284) = 7.66$, $p < 0.001$, $d = 0.91$, 95% CI = 0.65–1.16). Participants also thought that the low-SES target would be less affected by negative events that were more expected for low-SES ($M = 6.92$, $SD = 1.69$) than high-SES targets ($M = 8.62$, $SD = 1.48$; $t(284) = 9.03$, $p < 0.001$, $d = 1.07$, 95% CI = 0.80–1.33). The thick skin bias thus appears insensitive to considerations of surprise or expectation: it generates perceptions of lower distress among people in poverty both for unexpected events and for events that might be seen as more expected in poverty contexts.

Taken together, Studies 2–4 support the notion that the thick skin bias is not driven by beliefs about the rich, by dehumanization or by perceived differential expectations. Rather, low-SES people are thought to be toughened by the hardships of poverty, and thus desensitized to life's negative events, relative to those of higher SES. (For further evidence, see Supplemental Study 2, in which we found that the perceived toughness of lower-SES targets mediated the thick skin bias.) In the following series of studies, we explore certain features in life's trajectory that account for those in poverty being thought of as having grown thicker skin – first by looking at the effects of childhood versus adult poverty, and then by testing whether the thick skin bias extends to judgments concerning children.

Studies 5a–5b: past and present poverty

In Studies 5a and 5b, we further explore the perceived role of habituation by separating the potential effects of poverty during childhood from those of

poverty in adulthood. Study 5a examines the perceived effect of childhood SES in contrast to an adult's SES in the past ten years; Study 5b examines the perceived effects of childhood SES in contrast to an adult's SES in the past year.

Method

We recruited 250 participants through MTurk for Studies 5a and 5b, of whom 204 and 223, respectively, met the inclusion criteria (passing an attention check question and confirming nonrandom responding). In Study 5a, participants rated the extent to which the 11 negative events from Study 1a would affect a White male target individual. The individual was described as growing up in either poverty or affluence (past SES condition) and as having lived in either poverty or affluence for the last ten years (present SES condition). In Study 5b, the procedure was identical, except that the present SES information was about the last year rather than last ten years. Both studies thus employed 2 (past SES: low versus high) \times 2 (present SES: low versus high) designs.

Results

Study 5a

Participants thought that targets who had grown up with low SES would be less affected by the negative events than targets who had grown up with high SES ($F(1, 200) = 45.94$, $p < 0.001$, $\eta_p^2 = 0.18$, 90% CI = 0.11–0.26). Similarly, participants thought that targets who had been of low SES for the past ten years would be less affected by the negative events than those who were of high SES for the past ten years ($F(1, 200) = 29.63$, $p < 0.001$, $\eta_p^2 = 0.13$, 90% CI = 0.06–0.20). There was a significant interaction between past and present SES ($F(1, 200) = 6.11$, $p = .014$, $\eta_p^2 = 0.03$, 90% CI = 0.00–0.08), such that the effect of present SES, though significant in both conditions, was larger for targets who had grown up with high SES ($t(103) = 5.54$, $p < 0.001$, $d = 1.08$, 95% CI = 0.64–1.51) than for those who had grown up with low SES ($t(97) = 2.13$, $p = 0.035$, $d = 0.43$, 95% CI = 0.02–0.83) (see [Figure 3](#)).

Study 5b

Participants thought that targets who had grown up with low SES would be less affected by the negative events than targets who had grown up with high SES ($F(1, 219) = 20.87$, $p < 0.001$, $\eta_p^2 = 0.09$, 90% CI = 0.04–0.15). Similarly, participants thought that targets who had been of low SES for the past year would be less affected by the negative events than those who were of high SES during the past year ($F(1, 219) = 71.61$, $p < 0.001$, $\eta_p^2 = 0.27$, 90% CI = 0.17–0.32). As in Study 5a, there was a significant interaction

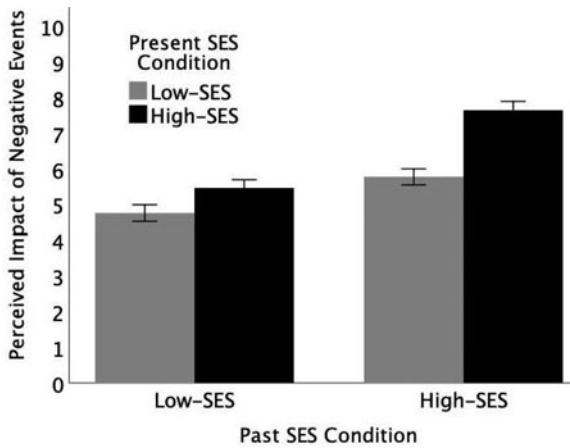


Figure 3. Effect of target's past and present socioeconomic status (SES) on perceived impact of negative events in Study 5a.

Note: Error bars indicate the standard error of the mean.

between past and present SES ($F(1, 219) = 77.16$, $p < 0.001$, $\eta_p^2 = 0.26$, 90% CI = 0.18–0.34), such that SES in the past year influenced perceptions of targets who had grown up with high SES ($t(115) = 12.58$, $p < 0.001$, $d = 2.33$, 95% CI = 1.76–2.88), but had little effect for targets who had grown up with low SES ($t(104) = -0.22$, $p = 0.826$, $d = -0.04$, 95% CI = -0.42–0.34) (see Figure 4).

Discussion

Studies 5a and 5b show that both past and present SES can drive the thick skin bias. Interestingly, however, the effects of present SES in Studies 5a and 5b were larger for individuals who had grown up with high SES than for those who had grown up with low SES. Apparently, people believe that the formerly rich are more easily toughened by poverty than the formerly poor are made vulnerable by abundance.

Studies 6–9: judgments concerning children

If brief periods of just one year are enough to cue the thick skin bias, do perceptions of hardship's toughening effects extend to judgments concerning children? And does the asymmetry between positive and negative events extend to children as well? In Studies 6–9, we explore adult participants' perceptions of the experiences of ten-year-old and five-year-old children.

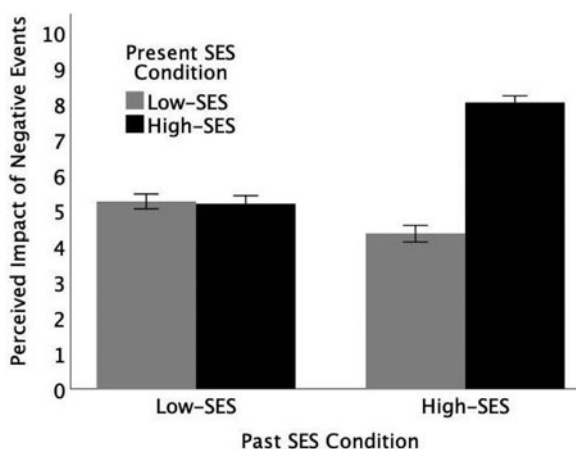


Figure 4. Effect of target’s past and present socioeconomic status (SES) on perceived impact of negative events in Study 5b.

Note: Error bars indicate the standard error of the mean.

Studies 6 and 7: judgments about ten-year-old children

Method

In Studies 6 and 7, participants read about a low-SES or a high-SES ten-year-old (who was shown to be either a White boy or White girl using faces from the National Institute of Mental Health (NIMH) Child Emotional Faces Picture Set; Egger *et al.*, 2011). In Study 6, participants rated the extent to which the ten-year-old would be affected by 11 negative events (altered to be age-appropriate; e.g., “Jordan is kept awake by noise outside his [her] bedroom and only gets a few hours of sleep”; $\alpha = 0.85$; see Supplemental Materials). In Study 7, participants instead rated the extent to which the ten-year-old would be affected by 12 positive events (e.g., “Jordan’s teacher compliments his [her] recent classwork”; $\alpha = 0.88$; see Supplemental Materials). We recruited 403 and 404 participants for Studies 6 and 7, respectively, of whom 356 and 375 met the aforementioned inclusion criteria (passing an attention check question and confirming nonrandom responding).

Results

As they did when judging the experiences of adults, participants in Study 6 thought that the low-SES child would be less negatively affected by the negative events ($M = 5.61$, $SD = 1.58$) than the high-SES child ($M = 7.49$, $SD = 1.39$; $t(354) = 11.88$, $p < 0.001$, $d = 1.26$, 95% CI = 1.01–1.51), whereas participants in Study 7 thought that the low-SES child would be more positively affected by

the positive events ($M = 8.13$, $SD = 1.08$) than the high-SES child ($M = 7.72$, $SD = 1.33$; $t(360.27) = -3.22$, $p < 0.001$, $d = -0.33$, 95% CI = -0.54 to -0.13).

Studies 8 and 9: judgments about five-year-old children

Method

In Studies 8 and 9, participants read about a low-SES or a high-SES five-year-old (who was shown to be either a White boy or White girl using face pictures from the Child Affective Facial Expression database; LoBue & Thrasher, 2015). In Study 8, participants rated the extent to which the five-year-old would be affected by five negative events (altered to be age-appropriate; e.g., “Jordan tries to say hi to a classmate but is ignored”; $\alpha = 0.81$; see Supplemental Materials). In Study 9, participants instead rated the extent to which the five-year-old would be affected by five positive events (e.g., “Jordan’s friend is having a party this weekend”; $\alpha = 0.70$; see Supplemental Materials). We recruited 448 and 454 participants for Studies 6 and 7, respectively, of whom 409 and 421 met the aforementioned inclusion criteria.

Results

As in the previous studies, participants in Study 8 thought that, despite the children’s young age, the low-SES five-year-old would be less negatively affected by the negative events ($M = 5.70$, $SD = 2.06$) than the high-SES five-year-old ($M = 7.79$, $SD = 1.38$; $t(370.60) = 12.19$, $p < 0.001$, $d = 1.19$, 95% CI = 0.96 – 1.41). Contrary to our previous findings, however, participants in Study 9 did not think that the low-SES child would be more or less affected by the positive events ($M = 8.13$, $SD = 1.44$) than the high-SES child ($M = 8.15$, $SD = 1.37$; $t(419) = 0.14$, $p = 0.889$, $d = 0.01$, 95% CI = -0.18 – 0.20). This suggests that the effects of poverty may be perceived to emerge earlier for negative than for positive events, as if a child learns to tolerate the affronts of poverty before developing the ability to enjoy even small pleasures.

In summary, the preceding studies suggest that the thick skin bias has a pervasive influence on people’s perceptions of the rich and poor, extending even to judgments about young children. In the next section, we further test the reach of the bias by examining whether professionals in their own domain of expertise – customer service, mental health and education – similarly believe that people in poverty are less vulnerable to negative events than people of higher SES.

Studies 10–13: the bias among professionals

The thick skin bias may shape judgments and behavior in a wide range of contexts. Drawing on research documenting mistreatment and neglect of low-SES

people in customer service, mental health and educational contexts (e.g., Ehrenreich, 2001; Lott, 2002; Kugelmass, 2016; Croizet *et al.*, 2017), we recruited professional chefs, social workers, graduate students training to be therapists and teachers to investigate whether the thick skin bias also shapes professionals' judgments.

Study 10: chefs

We recruited 62 professional chefs who actively worked in a customer service environment, of whom 44 met the inclusion criteria (passing an attention check question and confirming nonrandom responding). Note that, although smaller than many behavioral science studies, this sample is adequately powered to detect the effect from Study 1a ($d = 1.13$) with 95% probability at standard levels of significance ($\alpha = 0.05$).

Participants read about a low-SES or a high-SES White male target, after which they rated how negatively affected the target would be in four restaurant situations: (1) ordering takeout and being given an overcooked, badly prepared meal; (2) having their food take an unexpectedly long time to be served; (3) having a waiter make a mistake and bring a wrongly prepared dish; and (4) being seated at a table very near the bathrooms ($\alpha = 0.80$). Mirroring our lay participants, the chefs thought the low-SES target would be less affected by these negative events ($M = 4.61$, $SD = 1.89$) than the high-SES target ($M = 6.64$, $SD = 1.31$; $t(42) = 4.12$, $p < 0.001$, $d = 1.24$, 95% CI = 0.54–1.93).

Study 11: social workers

We recruited 95 participants who were either enrolled in a master's program for social work (in which working with clients is part of the training) or had received a master's degree in social work, of whom 89 met the aforementioned inclusion criteria. The materials and procedure for this study were identical to those of Study 1a and, as in that study, participants in Study 11 thought that the low-SES target would be less affected by the negative events ($M = 6.27$, $SD = 1.61$) than the high-SES target ($M = 7.64$, $SD = 1.32$; $t(87) = 4.40$, $p < 0.001$, $d = 0.93$, 95% CI = 0.47–1.39).

Study 12: therapists-in-training

We recruited 37 graduate students in counseling programs, all of whom met the aforementioned inclusion criteria (passing an attention check question and confirming nonrandom responding). This sample size provides a 91% probability of detecting the effect from Study 1a. Completing the same materials and procedure as in the previous study, participants thought that

the low-SES target would be less affected by the negative events ($M = 4.97$, $SD = 1.43$) than the high-SES target ($M = 6.99$, $SD = 1.48$; $t(35) = 4.23$, $p < 0.001$, $d = 1.39$, 95% CI = 0.59–2.17).

Study 13: teachers

We recruited two samples of K–12 teachers. The first sample ($n = 53$) was recruited at a local education conference; the second sample ($n = 175$) was recruited via email from a proprietary list of teachers across the USA. All participants in the first sample were included in analyses (there were no attention check questions) and 156 participants from the second sample were included in analyses after meeting the aforementioned inclusion criteria.

Participants in both studies read about a low-SES or a high-SES ten-year-old child (who was shown via a face picture to be either a White boy or White girl) and rated how affected the child would be by five school-related negative events (e.g., “Jordan is scolded by his [her] teacher for something he [she] did at school”; see Supplemental Materials). Teachers in the first sample thought that the low-SES ten-year-old would be less negatively affected by the events ($M = 5.73$, $SD = 1.80$) than the high-SES ten-year-old ($M = 6.97$, $SD = 1.73$; $t(51) = 2.56$, $p = 0.014$, $d = 0.70$, 95% CI = 0.12–1.27). Teachers in the second sample similarly thought that the low-SES child would be less negatively affected by the events ($M = 6.47$, $SD = 1.90$) than the high-SES child ($M = 7.26$, $SD = 1.62$; $t(154) = 2.80$, $p = 0.006$, $d = 0.45$, 95% CI = 0.13–0.77).

Taken together, Studies 10–13 find that professionals working in a variety of contexts display the same thick skin bias shown by laypeople. The thick skin bias thus has the potential to affect the ways people are perceived and treated in many different settings, determining which customers receive more consideration from service employees, which students receive care and attention in the classroom and which patients receive more dedicated care from mental health professionals. In our final study, we go a step further in testing the generalizability of the thick skin bias by recruiting a nationally representative sample of adults living in the USA.

Study 14: nationally representative US sample

We conducted a pre-registered nationally representative survey to test the robustness of the thick skin bias across the US population.

Method

We recruited 1074 participants through the Understanding America Study (UAS; <https://uasdata.usc.edu/index.php>). To be included in the analyses,

participants needed to pass an attention check question; 772 participants met this criterion and were included. After data collection was complete, UAS researchers calculated sample weights (see <https://uasdata.usc.edu/index.php>) to ensure that the sample was nationally representative of the US population. We report the analyses using these weights, although we find the same pattern of results when using the raw data. This study was pre-registered through AsPredicted.org (<https://aspredicted.org/bs93y.pdf>).

Participants judged the effects of ten negative events on a low-SES or a high-SES target individual. The target individual was either a man or a woman and was either White or Black (as shown by a face picture). Half of the negative events were normed to be equally unexpected for low-SES and high-SES individuals, whereas the other half were normed to be more expected in low-SES contexts (see Supplemental Materials).

Results

Overall, the US sample perceived low-SES targets to be less negatively affected than high-SES targets by the variety of negative events. For the events that were seen as more expected in low-SES contexts, participants thought that the low-SES target would be less negatively affected ($M = 7.03$, $SD = 1.88$) than the high-SES target ($M = 7.73$, $SD = 1.68$; $t(769) = 5.44$, $p < 0.001$, $d = 0.39$, 95% CI = 0.25–0.54). This effect was not qualified by target gender ($F(1, 707) = 0.69$, $p = 0.407$, $\eta_p^2 = 0.00$, 90% CI = 0.00–0.01), target race ($F(1, 707) = 3.12$, $p = 0.078$, $\eta_p^2 = 0.00$, 90% CI = 0.00–0.02) or a three-way interaction between SES, gender and race ($F(1, 707) = 0.51$, $p = 0.474$, $\eta_p^2 = 0.00$, 90% CI = 0.00–0.01).

A similar pattern was observed for events that were seen as equally expected in low- and high-SES contexts. Participants thought that the low-SES target would be less negatively affected by the equally expected events ($M = 5.94$, $SD = 1.91$) than the high-SES target ($M = 6.90$, $SD = 2.00$; $t(769) = 6.84$, $p < 0.001$, $d = 0.49$, 95% CI = 0.35–0.64). The effect was not qualified by target gender ($F(1, 707) = 0.62$, $p = 0.431$, $\eta_p^2 = 0.00$, 90% CI = 0.00–0.01) or an SES \times gender \times race interaction ($F(1, 707) = 0.04$, $p = 0.840$, $\eta_p^2 = 0.00$, 90% CI = 0.00–0.00). However, there was an interaction between target SES and target race ($F(1, 707) = 10.17$, $p = 0.001$, $\eta_p^2 = 0.01$, 90% CI = 0.00–0.03). The effect of SES for the equally unexpected events was significant for both Black and White targets, but it was larger for White targets ($t(402) = 7.10$, $p < 0.001$, $d = 0.71$, 95% CI = 0.50–0.91) than for Black targets ($t(366) = 2.70$, $p = 0.007$, $d = 0.28$, 95% CI = 0.07–0.49).

This interaction was driven by the fact that participants perceived the high-SES Black target as less negatively affected by the equally unexpected events

than the high-SES White target ($t(378) = 3.95$, $p < 0.001$, $d = 0.41$, 95% CI = 0.20–0.61), whereas they perceived that the White and Black low-SES targets would be equally affected ($t(390) = 0.08$, $p = 0.937$, $d = 0.01$, 95% CI = -0.19–0.21). Because participants' judgments were not influenced by target race in the low-SES condition (here or in Studies 1a–1b), we have no reason to conclude that the interaction is the result of perceived differences of distress by race alone (e.g., in contrast to some origins of racial biases in physical pain perception; Hoffman *et al.*, 2016). Instead, the data suggest that the effect is attributable to racialized perceptions of SES and hardship, combined with a thick skin bias. In Supplemental Study 3, we found that participants perceived the high-SES Black target as of somewhat lower SES than the high-SES White target (despite identical written descriptions; see Supplemental Materials). Thus, the interaction we observed may be due to the fact that high-SES Black targets, perceived as having lower SES, were seen as less affected by the negative events than the high-SES White targets, thereby reducing the strength of the SES manipulation, yet remaining in line with the thick skin bias.

In summary, the results of this study offer compelling evidence for the thick skin bias in a nationally representative US sample.

General discussion

Across many studies, we found consistent evidence for a thick skin bias in social judgment, according to which people believe, often erroneously, that the poor have been toughened by the hardship of poverty, making them less susceptible to future harms. We found this effect across a wide variety of negative events, in judgments about both adults and young children and in the judgments of professional chefs, social workers, therapists-in-training and teachers, as well as in a nationally representative sample of the US population. The thick skin bias has the potential to broadly shape judgments, behaviors and interactions across many contexts. Before further exploring the implications of such a widespread bias, we first consider three lingering questions: Is the thick skin bias really a *bias*? Do low-SES and high-SES people display the thick skin bias to the same degree? And does the thick skin bias shape how people see others relative to themselves?

Is the thick skin bias really a bias?

We attribute the thick skin bias to a lay theory that people readily adapt to their circumstances and adjust their standards accordingly – for example, the assumption that those who are accustomed to sleeping in a noisy environment

will have developed the ability to sleep largely undisturbed by the noise. Classic research on psychophysics shows that people tend to judge new stimuli based on prior experience – a novel object feels heavier after holding a lighter versus a heavier object (Harvey & Campbell, 1963). Our interpretation of the results presented here is that people (over)extend this analysis to experiences beyond low-level perception. In support of this interpretation, we observe a similar pattern of results when manipulating life hardship, independent of SES: participants believed that a middle-class individual who had experienced substantial life hardship would be less affected by negative events than an individual from the same SES background who had experienced little hardship (see Supplemental Study 4 for details).

The thick skin bias may thus be thought of as the result of a ‘hardship breeds toughness’ heuristic, according to which the effects of new events are judged based on previously experienced hardship (see also Hoffman & Trawalter, 2016). People may resort to such a heuristic both consciously and unconsciously, although to what extent may depend on context and remains an interesting question for future research. The idea that people grow tougher through hardship is likely to be explicitly held by many; indeed, aphorisms capturing this idea are common in Western popular culture. Literary protagonists like Dean Koontz’s Laura Shane assert that “Adversity breeds toughness, and the tough succeed” (Koontz, 1988, p. 149); popstars like Kelly Clarkson sing that “What doesn’t kill you makes you stronger” (Elofsson *et al.*, 2011); and public figures like Michelle Obama proclaim that “experience facing and overcoming adversity is actually one of your biggest strengths ... students who had every advantage ... were ill-equipped to handle their first encounter with disappointment” (The White House, Office of the First Lady, 2016). Consistent with a heuristic that is consciously endorsed, making the comparison between low- and high-SES individuals more salient in a within-subjects design does not eliminate the thick skin bias (see Supplemental Study 5 for details). Of course, people may also implicitly associate poverty and hardship with toughness, creating an additional, automatic route to the thick skin bias. Crucially, whether explicit, implicit or both, the thick skin bias is often likely to be false.

It is apparently true that *mild* adversity, if it is temporary, feels controllable and is successfully overcome, can sometimes render people more resilient to negative events (e.g., Dienstbier, 1989; Seery *et al.*, 2013). Importantly, however, this does not apply to a panoply of repeated stressors and the persistent, often-uncontrollable hardship of poverty. Chronic stress and repeated adverse life experiences of the kind often encountered by those in poverty, ranging from daily nuisances, such as ‘kids got into trouble at school’, ‘problems with my supervisor’ and ‘car wouldn’t start’, to traumatic events,

such as life-threatening accidents, physical and sexual abuse or being a witness to another person being killed or assaulted, do not buffer against future such negative events. On the contrary, they can exacerbate their impact (Caspi *et al.*, 1987; Seery *et al.*, 2013; Seery & Quinton, 2016; Gerber *et al.*, 2018). Like other biases, the thick skin bias is predicated on some true relationship between past and future experience, but it harbors systematic and important errors.

In fact, even what might appear as quintessential cases of adaptation are not so straightforward. Early and regular exposure to noise, to return to our earlier example, does not lead people to adapt; instead, it continues to produce physiological reactions (e.g., Griefahn *et al.*, 2008; Bagley *et al.*, 2015). Lower-SES schoolchildren experience poorer sleep – fewer sleep minutes, greater sleep/wake problems and increased sleepiness – than their higher-SES classmates, apparently failing to habituate to noisy environments in the way psychophysical intuition might predict. While based on reasonable beliefs by well-meaning perceivers, the thick skin bias may be misapplied to circumstances that do not produce the expected adaptation, to the detriment of those who find themselves in that predicament.

Besides the ample literature documenting an increase, rather than a diminishing, of frailty and sensitivity due to repeated exposure (see, e.g., Bucchianeri *et al.*, 2014; Evans & Cassels, 2014; Seery & Quinton, 2016; Barwood *et al.*, 2017), a glimpse at our own items further highlights the occasional absurdity of the thick skin bias. The events we described, such as the heating system breaking in winter, a flooded apartment, tap water that needs to be filtered or being stranded without a ride in the rain, were all rated as less intolerable or inconvenient to the poor than the rich. Obviously, it is much easier for the rich to check into a hotel when there is no heat, to call someone to deal with the flood and resulting mold, to pay to install a filter, to hail a cab or to call a limo. Interestingly, participants in an exploratory study also thought that low-SES individuals were less sensitive to *physical pain* than their higher-SES counterparts (see Supplemental Study 6 for details). Although much additional research is needed on when and how the thick skin bias shapes physical pain perception – including integrating this finding with related beliefs around race (Hoffman *et al.*, 2016; Hoffman & Trawalter, 2016), given that race and SES are intimately connected – the belief that poverty toughens people against physical pain is again contrary to what is often the case in reality (see, e.g., Chou *et al.*, 2016; Schistad *et al.*, 2017).

Finally, our own participants demonstrated that the thick skin bias is often wrong via their own reported reactions. In addition to rating the impact of the negative events on another individual, participants in most of our studies also rated the impact that the events would have on themselves. Participants from

lower-SES backgrounds (measured in terms of education, personal income, household income or subjective social status) did not perceive themselves to be less vulnerable than participants from higher-SES backgrounds. If anything, lower-SES participants perceived the events to be *worse* than did higher-SES participants, and this pattern was particularly robust in Study 14, where our nationally representative sample included the widest range of incomes (see Supplemental Materials for all analyses).

Do low-SES and high-SES people display the thick skin bias to the same degree?

It could be that higher-SES people are more prone to display the thick skin bias because, for example, the idea that poverty toughens people reduces the potential discomfort of living in affluence while countless others struggle. Contrary to this possibility, however, we found no consistent relations between participant SES and the proclivity for or size of the thick skin bias across our many studies (see Supplemental Materials for all analyses). Thus, both low- and high-SES participants appear to believe that the hardship of poverty makes the poor tougher than the rich. Perhaps, because the bias emerges from basic intuitions about adaptation, we might expect people across the SES gradient to show the same overextended intuitions. Or, it may be that low- and high-SES individuals both believe that hardship toughens people, but for different reasons. High-SES people may be motivated to believe that those living in poverty are not suffering so badly, whereas low-SES people may be motivated to derive meaning from hardship, telling themselves, as Nietzsche (1889/1997) did, that “what doesn’t kill me makes me stronger” (p. 6).

Does the thick skin bias shape how people see others relative to themselves?

The thick skin bias may also influence interpersonal judgments. Because participants in most studies rated the impact of the negative events for themselves as well as the low- or high-SES individuals, we can compare how participants perceived the experiences for themselves and for others. When we do so, we find that participants tend to think that low-SES adults would experience negative events less intensely than they themselves would, and that high-SES adults would experience them more intensely. Conversely, for positive events, participants tend to think that low-SES adults would experience those events more intensely than they, and high-SES adults less intensely. Strikingly, those differences emerge even when participants gauge their experiences relative to those of children: adult participants perceived that they would be more harmed than low-SES ten- and five-year-olds in the same situations, whereas they

thought that high-SES ten- and five-year-olds would be more negatively affected than they (see Supplemental Materials for all analyses).

Implications and future directions

The thick skin bias provides a simple explanation for patterns of neglect documented throughout the social and behavioral sciences and has potentially profound implications both for policy and for everyday life. It may explain treatment disparities that privilege those of higher SES over those of lower SES, as well as systematic neglect across many institutions. If lower-SES citizens are seen as less encumbered than their higher-SES counterparts when things go wrong – and as more pleased by even trivial positive circumstances – initiatives ranging from street cleaning and public park restoration, to housing, transportation, safety and access to clean air and water will all seem of less urgent priority for low-SES communities. After all, policymakers might reason, the poor are tough – they endure inconveniences and upsets with greater aplomb.

While we do not have direct evidence concerning active policymakers, the consistent pattern we observed across a wide range of participants, including professionals and people across the educational and SES spectra, compounded by the fact that policymakers consistently display other forms of bias and discrimination (e.g., Butler & Broockman, 2011; Costa, 2017), suggests that the thick skin bias is likely to shape the judgments of policymakers and other practitioners as well. Indeed, the thick skin bias may help fuel patterns of institutional inequality, such as those in the law, where ruinous monetary sanctions are disproportionately imposed on low-income defendants, including some never convicted of a crime (Harris, 2016), and where affluent defendants receive lighter sentences in criminal courts (Western, 2006). If higher-SES defendants are seen as more distressed by punishment, it may appear that lighter sentences should suffice to achieve the same punitive effect as longer ones for lower-SES defendants.

Perhaps most consequential are the implications of the thick skin bias for the levels of concern and civility shown in the conduct of everyday life. If people in poverty are perceived as happy with less – less distressed when things go badly and more pleased when little things go well – they may, even without ill intent, receive less courtesy, less care and less attention, along with greater neglect and disrespect. Absent callousness or malice, simply because it appears less of an urgent problem, lower-SES individuals may elicit less concern from others about their predicament. When service is slow, a thick skin bias suggests low-SES customers will be less annoyed waiting a little longer; when the doctor is overbooked, low-SES patients will be less inconvenienced by a canceled appointment. They will be less upset when their requests are denied or

when made to evacuate a rental unit, and less distraught when stopped to be frisked by the police. People in poverty, according to this account, may be treated with a lack of kindness or consideration partly because such treatment does not seem so bad. More generally, the thick skin bias may prove comforting in the face of inequality. It is easier to tolerate homelessness if people believe that the homeless suffer from it less than they themselves would. If people in poverty are relatively invulnerable, then one can worry less about the consequences of economic injustice (cf., Kay & Jost, 2003).

The effect sizes reported in our studies, frequently exceeding mean differences of one standard deviation, are notably large relative to typical findings in the behavioral sciences. Their magnitude and replicability suggest that the effect is robust and likely to influence perception in a wide range of settings. One contributor to the ubiquity of the bias may be an imbalanced propensity to complain by those of higher versus lower SES. There is a reluctance on the part of people in poverty to ‘create trouble’, perhaps for fear of the backlash they might subsequently encounter. In her account of working-class experiences, for example, Tirado (2012) describes being “constantly told to know our place and not make a fuss” because “feelings are something that only professional people are allowed to have” (p. 85). The reluctance to make trouble, a tendency of those with less power, has been similarly observed in feminist critiques (e.g., Ahmed, 2010) and in studies of older adults, who refrain from complaining in the context of medical care for fear of causing a fuss or being seen as troublemakers (Parliamentary and Health Service Ombudsman, 2015). The tendency to refrain from complaining is likely to nurture the thick skin bias: in a world in which the poor are careful to exhibit relatively muted reactions while the rich complain, an observer might deduce that the latter are more severely inconvenienced.

A further potential contributor to the thick skin bias is that it can appear relatively benign, if not outright flattering. The suggestion that people in poverty are tough – that they are strong and resilient in contrast to the vulnerable and delicate rich – can seem respectful and empowering. Yet, it can have detrimental repercussions. The thick skin bias risks focusing attention, effort and other resources on those who overwhelmingly receive them, while exacerbating and justifying the failure to support those most in need. Indeed, even in instances where thick skin intuitions might be correct – namely, where low-SES individuals might be less affected by negative circumstances – it is not clear that the right policy is to take such fortitude into account. The right course may be to focus on those most in need, even when they have habituated to their difficult predicament. This raises the interesting possibility that the thick skin bias, unlike other biases or heuristics, should be avoided not only when it is wrong, but even when it is right.

Supplementary material

To view supplementary material for this article, please visit <https://doi.org/10.1017/bpp.2020.33>

Acknowledgments

We thank the members of the Stigma and Social Perception Lab, the Social Research Seminar and the Social Policy Workshop at Princeton University, Stacey Sinclair, Nicole Shelton, Kobi Tsesarsky, Jacob Goebel, Julie Norem, Jonathan Cheek, Salar Rad, Bryn Bandt-Law, Edward Freeland, Kathryn Edin, Keith Payne, Donald Redelmeier and Daniel Kahneman and the Understanding America Study staff for helpful comments and assistance with data collection.

Financial support

The first author was supported by a Graduate Research Fellowship from the National Science Foundation and Graduate Student Research Grants from the Princeton University Cognitive Science Program and the Princeton Center for Health and Wellbeing. The second author was supported by grants from the National Science Foundation (SES-1426642) and the Alfred P. Sloan Foundation. Both authors were supported by funding from the National Institutes of Health (P30AG024928) and the Princeton Center for Translational Research on Aging.

References

- Ahmed, S. (2010), 'Feminist killjoys (and other willful subjects)', *Scholar and Feminist Online*, 8: 1–8.
- Bagley, E. J., R. J. Kelly, J. A. Buckhalt and M. El-Sheikh (2015), 'What keeps low-SES children from sleeping well: The role of presleep worries and sleep environment', *Sleep Medicine*, 16: 496–502.
- Barwood, M. J., J. Corbett, M. Tipton, C. Wagstaff and H. Massey (2017), 'Habituation of the cold shock response is inhibited by repeated anxiety: implications for safety behaviour on accidental cold water immersions', *Physiology & behavior*, 174: 10–17.
- Blyth, F. M. (2010), 'The demography of chronic pain: an overview', in P. Croft, F. M. Blyth and D. van der Windt (eds), *Chronic pain epidemiology: From aetiology to public health*, Oxford, UK: Oxford University Press, 19–27.
- Breslau, N., H. D. Chilcoat, R. C. Kessler and G. C. Davis (1999), 'Previous exposure to trauma and PTSD effects of subsequent trauma: Results from the Detroit Area Survey of Trauma', *American Journal of Psychiatry*, 156: 902–907.
- Bucchianeri, M. M., M. E. Eisenberg, M. M. Wall, N. Piran and D. Neumark-Sztainer (2014), 'Multiple types of harassment: associations with emotional well-being and unhealthy behaviors in adolescents', *Journal of Adolescent Health*, 54(6): 724–729.
- Bullock, H. E. (2013), *Women and poverty: Psychology, public policy, and social justice*, New York: John Wiley and Sons.

- Butler, D. M. and D. E. Broockman (2011), 'Do politicians racially discriminate against constituents? A field experiment on state legislators', *American Journal of Political Science*, 55: 463–477.
- Caspi, A., N. Bolger and J. Eckenrode (1987), 'Linking person and context in the daily stress process', *Journal of Personality and Social Psychology*, 52: 184–195.
- Chou, E. Y., B. L. Parmar and A. D. Galinsky (2016), 'Economic insecurity increases physical pain', *Psychological Science*, 27: 443–454.
- Costa, M. (2017), 'How responsive are political elites? A meta-analysis of experiments on public officials', *Journal of Experimental Political Science*, 4: 241–254.
- Cozzarelli, C., A. V. Wilkinson and M. J. Tagler (2001), 'Attitudes toward the poor and attributions for poverty', *Journal of Social Issues*, 57: 207–227.
- Croizet, J.-C., S. Goudeau, M. Marot and M. Millet (2017), 'How do educational contexts contribute to the social class achievement gap: Documenting symbolic violence from a social psychological point of view', *Current Opinion in Psychology*, 18: 105–110.
- Dienstbier, R. A. (1989), 'Arousal and physiological toughness: Implications for mental and physical health', *Psychological Review*, 96: 84–100.
- Durante, F. and S. T. Fiske (2017), 'How social-class stereotypes maintain inequality', *Current Opinion in Psychology*, 18: 43–48.
- Egger, H. L., D. S. Pine, E. Nelson, E. Leibenluft, M. Ernst, K. E. Towbin and A. Angold (2011), 'The NIMH Child Emotional Face Picture Set (NIMH-ChEFS): A new set of children's facial emotion stimuli', *International Journal of Methods in Psychiatric Research*, 20: 145–156.
- Ehrenreich, B. (2001), *Nickel and dimed: On (not) getting by in America*, New York, NY: Metropolitan Books.
- Elofsson, J., A. Tamposi, D. Gamson and G. Kurstin (2011), Stronger (What doesn't kill you). [Recorded by K. Clarkson]. On *Stronger* [CD]. New York: RCA Records.
- Evans, G. W. and R. C. Cassells (2014), 'Childhood poverty, cumulative risk exposure, and mental health in emerging adults', *Clinical Psychological Science*, 2(3): 287–296.
- Evans, G. W. and P. Kim (2012), 'Childhood poverty and young adults' allostatic load: The mediating role of childhood cumulative risk exposure', *Psychological Science*, 23: 979–983.
- Fiske, S. T. and H. R. Markus (Eds.). (2012) *Facing social class: How societal rank influences interaction*, New York: Russel Sage Foundation.
- Garfin, D. R., E. A. Holman and R. C. Silver (2015), 'Cumulative exposure to prior collective trauma and acute stress responses to the Boston Marathon bombings', *Psychological Science*, 26: 675–683.
- Gerber, M. M., S. B. Frankfurt, A. A. Contractor, K. Oudshoorn, P. Dranger and L. A. Brown (2018), 'Influence of multiple traumatic event types on mental health outcomes: Does count matter?' *Journal of Psychopathology and Behavioral Assessment*, 40: 645–654.
- Green, C., K. H. Todd, A. Lebovits and M. Francis (2006), 'Disparities in pain: Ethical issues', *Pain Medicine*, 7: 530–533.
- Griefahn, B., P. Bröde, A. Marks and M. Basner (2008), 'Autonomic arousals related to traffic noise during sleep', *Sleep*, 31: 569–577.
- Harris, A. (2016), *A pound of flesh: Monetary sanctions as punishment for the poor*, Russell Sage Foundation.
- Harvey, O. J. and D. T. Campbell (1963), 'Judgments of weight as affected by adaptation range, adaptation duration, magnitude of unlabeled anchor, and judgmental language', *Journal of Experimental Psychology*, 65: 12–21.
- Helson, H. (1964), *Adaptation-level theory*, New York: Harper & Row.
- Hoffman, K. M. and S. Trawalter (2016), 'Assumptions about life hardship and pain perception', *Group Processes & Intergroup Relations*, 19: 493–508.
- Hoffman, K. M., S. Trawalter, J. R. Axt and M. N. Oliver (2016), 'Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites', *Proceedings of the National Academy of Sciences*, 113: 4296–4301.

- Hunt, M. O. and H. E. Bullock (2016), 'Ideologies and beliefs about poverty', in D. Brady & L. M. Burton (Eds.), *The Oxford handbook of the social science of poverty*, New York: Oxford University Press, 93–116.
- Kay, A. C. and J. T. Jost (2003), 'Complementary justice: Effects of "poor but happy" and "poor but honest" stereotype exemplars on system justification and implicit activation of the justice motive', *Journal of Personality and Social Psychology*, 85: 823–837.
- Koontz, D. (1988), *Lightning* [Kindle version]. New York: Berkley Books.
- Kraus, M. W., P. W. Piff and D. Keltner (2011), Social class as culture: The convergence of resources and rank in the social realm. *Current Directions in Psychological Science*, 20: 246–250.
- Kugelmass, H. (2016), "Sorry, I'm not accepting new patients": An audit study of access to mental health care. *Journal of Health and Social Behavior*, 57: 168–183.
- Litman, L., J. Robinson and T. Abbercock (2017), TurkPrime.com: A versatile crowdsourcing data acquisition platform for the behavioral sciences. *Behavior Research Methods*, 49: 433–442.
- LoBue, V. and C. Thrasher (2015), The Child Affective Facial Expression (CAFE) set: Validity and reliability from untrained adults. *Frontiers in Psychology*, 5: 1532.
- Lott, B. (2002), 'Cognitive and behavioral distancing from the poor', *American Psychologist*, 57: 100–110.
- Loughnan, S., N. Haslam, R. M. Sutton and B. Spencer (2014), 'Dehumanization and social class: Animality in the stereotypes of "white trash," "chavs," and "bogans."' *Social Psychology*, 45: 54–61.
- Ma, D. S., J. Correll and B. Wittenbrink (2015), 'The Chicago face database: A free stimulus set of faces and norming data', *Behavioral Research Methods*, 47: 1122–1135.
- Mende-Siedlecki, P., J. Qu-Lee, R. Backer and J. J. Van Bavel (2019), Perceptual contributions to racial bias in pain recognition. *Journal of Experimental Psychology: General*, 148: 863–889.
- Minear, M. and D. C. Park (2004), 'A lifespans database of adult facial stimuli', *Behavior Research Methods, Instruments, & Computers*, 36: 630–633.
- Nietzsche, F. (1889/1997). *Twilight of the idols* (R. Polt, Trans.). Hackett Publishing Company. (Original work published 1889).
- Parliamentary and Health Service Ombudsman (2015), Breaking down the barriers: Older people and complaints about health care. Retrieved at: https://www.ombudsman.org.uk/sites/default/files/Breaking_down_the_barriers_report.pdf
- Rosenman, S. (2002), 'Trauma and posttraumatic stress disorder in Australia: Findings in the population sample of the Australian National Survey of Mental Health and Wellbeing', *Australian and New Zealand Journal of Psychiatry*, 36: 515–520.
- Schistad, E. I., A. Stubhaug, A.-S. Furberg, B. L. Engdahl and C. S. Nielsen (2017), C-reactive protein and cold-pressor tolerance in the general population: The Tromsø Study. *Pain*, 158: 1280–1288.
- Seery, M. D., R. J. Leo, S. P. Lupien, C. L. Kondrak and J. L. Almonte (2013), An upside to adversity? Moderate cumulative lifetime adversity is associated with resilient responses in the face of controlled stressors. *Psychological Science*, 24: 1181–1189.
- Seery, M. D. and W. J. Quinton (2016), 'Understanding resilience: From negative life events to everyday stressors', in J. M. Olson & M. P. Zanna (eds), *Advances in Experimental Social Psychology*, 54 Volume 54, Cambridge, MA: Academic Press, 181–245.
- Shah, A. K., S. Mullainathan and E. Shafir (2012), 'Some consequences of having too little', *Science*, 338: 682–685.
- Smith, J. P. (1999), Healthy bodies and thick wallets: The dual relation between health and economic status. *Journal of Economic Perspectives*, 13: 145–166.
- The White House, Office of the First Lady (2016, June 3). *Remarks by the First Lady at the City College of New York commencement* [Press release]. Retrieved from <https://obamawhitehouse.archives.gov/the-press-office/2016/06/03/remarks-first-lady-city-college-new-york-commencement>
- Tirado, L. (2012), *Hand to mouth: Living in bootstrap American*, New York: Berkley Books.

- Trawalter, S. and K. M. Hoffman (2015), 'Got pain? Racial bias in perceptions of pain', *Social and Personality Psychology Compass*, **9**: 146–157.
- Turner, R. J., B. Wheaton and D. A. Lloyd (1995), 'The epidemiology of social stress', *American Sociological Review*, **60**: 104–125.
- Tversky, A. and D. Kahneman (1974), 'Judgment under uncertainty: Heuristics and biases', *Science*, **185**: 1124–1131.
- Waytz, A., K. M. Hoffman and S. Trawalter (2015), A superhumanization bias in White's perceptions of Blacks. *Social Psychological and Personality Science*, **6**: 352–359.
- Western, B. (2006), *Punishment and inequality in America*, New York: Russel Sage Foundation.
- Wolch, J., J. P. Wilson and J. Fehrenbach (2005), 'Parks and park funding in Los Angeles: An equity-mapping analysis', *Urban Geography*, **26**: 4–35.