

# Too Much Experience: A Desensitization Bias in Emotional Perspective Taking

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People often use their own feelings as a basis to predict others' feelings. For example, when trying to gauge how much someone else enjoys a television show, people might think "How much do I enjoy it?" and use this answer as basis for estimating others' reactions. Although personal experience (such as actually watching the show oneself) often improves empathic accuracy, we found that gaining too much experience can impair it. Five experiments highlight a *desensitization bias* in emotional perspective taking, with consequences for social prediction, social judgment, and social behavior. Participants who viewed thrilling or shocking images many times predicted first-time viewers would react less intensely (Experiments 1 and 2); participants who heard the same funny joke or annoying noise many times estimated less intense reactions of first-time listeners (Experiments 3 and 4); and further, participants were less likely to actually share good jokes and felt less bad about blasting others with annoying noise after they themselves became desensitized to those events (Experiments 3–5). These effects were mediated by participants' own attenuated reactions. Moreover, observers failed to anticipate this bias, believing that overexposed participants (i.e., repeatedly exposed participants who became desensitized) would make better decisions on their behalf (Experiment 5). Taken together, these findings reveal a novel paradox in emotional perspective taking: If people experience an evocative event many times, they may not become wiser companions but worse, unable to disentangle self-change from other-oriented thinking. Just as lacking exposure to others' experiences can create gaps in empathy and understanding, so may gaining too much.

*Keywords:* emotions, perspective taking, desensitization, social judgment, bias

In *To Kill a Mockingbird*, protagonist Atticus Finch famously observed that "you never really understand a person until you consider things from his point of view—until you climb into his skin and walk around in it" (Lee, 1960, p. 30). But Finch's appeal

for personal experience as a means to improve interpersonal understanding is not just fiction. A large body of literature shows that people are strongly influenced by their own reactions (i.e., "How does it make me feel?") when predicting how others would react to similar situations. In this way, people who encounter an emotional experience many times should not only gain a better idea of how they themselves respond to it but also of how the event may seem to someone else. Personal exposure thus helps close the "empathy gaps" that arise when people lack insight into others' "hot" emotional states (see Van Boven & Loewenstein, 2005; Van Boven, Loewenstein, Dunning, & Nordgren, 2013).

In this article, we explore whether a new "gap" is opened when people acquire too much experience, if they encounter the same emotional situation so many times that their own reaction becomes desensitized. If people draw on their desensitized feelings in making a prediction, they may be biased to believe that others encountering the event for the first time would also react less intensely. Our findings support this possibility. Five experiments show that personally experiencing an emotional event many times leads to biased perceptions of how others would respond to the event the first time, leading to important interpersonal costs. People's own desensitized feelings lead them to make different predictions of

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what others would choose (Experiments 1 and 2), to make different judgments of how others would feel (Experiments 3 and 4), and to potentially treat others differently (Experiments 3–5). Both previous research and lay intuitions about the benefits of experience suggest that people who encounter the same event many times should be able to provide privileged insight into how intense that event would feel for others; in the current article, however, we show that overexperienced individuals may be in a *worse* position to do so.

### Emotional Perspective Taking and the Traditional Benefits of Experience

The general sentiment that personal emotional experience allows people to better predict others' emotions dates back at least to the 2nd century BCE, to the Greek legend of Damocles—who eagerly swaps places with a king only to discover firsthand the pressures of maintaining power, thus enhancing his empathy for people in positions of authority—and remains a central tenet of contemporary religious figures, political leaders, policy makers, and popular writers (Dossett, 1996; Gill & Liamputtong, 2009; Haas, 2008). This idea is more broadly reflected in our everyday reliance on others who have amassed a lot of emotional experience (e.g., theater buffs, expert chefs, city locals) to provide appropriate advice for exciting experiences that we should pursue and unpleasant experiences that we should avoid. Such examples suggest that gaining experience should enrich—and at least not cloud—predictions of others' feelings.

Empirical research has demonstrated the assimilative impact of personal experience on thinking about others. When predicting how others feel, people attend to their own feelings. The act of predicting how others would react to an emotional situation is generally rooted in self-reference, such that one's own accessible reaction is drawn upon to make social judgments (see Van Boven et al., 2013, for a review). People tend to estimate what their own reactions to that situation would be (i.e., "How would I feel in their shoes?") and use this estimation to make predictions of others' reactions.

Consistent with this rationale, several studies have demonstrated that because people often mispredict how much emotional situations would influence their own preferences and behaviors, they also mispredict how much those situations would influence others. For example, participants who faced a purely hypothetical choice to engage in an embarrassing performance (dancing to Rick James' "Super Freak") overestimated how willing they would be to perform and underestimated how much they would demand to be paid compared with those who faced a real and immediate choice (Van Boven, Loewenstein, Welch, & Dunning, 2012). In turn, participants overestimated how willing *others* would be to perform and underestimated how much *others* would demand to be paid in the same way (Van Boven, Loewenstein, & Dunning, 2005). The general notion of using one's own "cold" unemotional state as a proxy to judge someone else's "hot" emotional state has been shown across a variety of related contexts. For example, people who are not hungry judge others who eat large quantities harsher than do people who are hungry (Nordgren, van der Pligt, & van Harreveld, 2006), and people who find it easy (vs. hard) to "fit in" underestimate how much social exclusion hurts (Nordgren, Banas, & MacDonald, 2011).

Accordingly, consistent with the view that underexposure to emotional situations causes people to underestimate the impact of emotions on others, providing people with a "sample" of an affective state helps reduce these gaps in empathy and understanding. For example, exposing people to a brief frightening film that arouses mild fear and anxiety causes them to make better predictions about how unwilling they would be to engage in an embarrassing public performance (Van Boven et al., 2012). Another study found that people more strongly oppose torture if they themselves are given brief bursts of pain (Nordgren, Morris McDonnell, & Loewenstein, 2011). Similarly, participants who stood outdoors (vs. indoors) on a cold day predicted that a target person who was lost outside in winter was more bothered by cold (O'Brien & Ellsworth, 2012).

Taken together, both intuitive wisdom and empirical evidence suggest that gaining personal experience should help improve people's predictions of others' feelings. Indeed, it seems almost axiomatic that experiencing a similar emotional situation many times should necessarily enhance—or at least not undermine—people's emotional perspective taking abilities (see also Pronin, Gilovich, & Ross, 2004).

### The Problem of Desensitization

If a little exposure helps emotional perspective taking, gaining a lot of exposure may (ironically) hinder it. As people experience additional exposure to stimuli, their emotional reactions tend to change, typically in the direction of *desensitization*. Often referred to as *affective habituation* (Dijksterhuis & Smith, 2002), *affective adaptation* (Wilson & Gilbert, 2008), or *sensory-specific satiation* (Gard, Gard, Kring, & John, 2006), here we operationalize desensitization as the general psychological process by which a person's original specific emotive response (e.g., fear, shock, joy) becomes less intense over time or across repeated exposure (Groves & Thompson, 1970; Wolpe, 1982).

There exists a clear *desensitization bias* in self-judgment. That is, in many situations people underestimate how they will become desensitized in the future (e.g., Gilbert, Driver-Linn, & Wilson, 2002) and also misremember how they have become desensitized from past events (e.g., Wilson, Meyers, & Gilbert, 2003). Feelings are fleeting, their sources are often unknown, and they are not well represented in memory, which makes it difficult for people to recognize the contextual influences that change their own emotional reactions over time or across exposures (Nisbett & Wilson, 1977; Robinson & Clore, 2002; Schwarz, Kahneman, & Xu, 2009; Wilson, 2009). Failing to account for desensitization-related change is no exception. Although people generally understand that emotional intensity typically diminishes from exposure (Igou, 2004), they tend to be poor at understanding the specific speed at and extent to which repeated exposure affects their feelings. This insensitivity is driven by the fact that change and desensitization often occur automatically, without awareness, and without a clear referent (Bem & McConnell, 1970; Frederick & Loewenstein, 1999; Kahneman & Snell, 1992; Morewedge, Huh, & Vosgerau, 2010; Nelson & Meyvis, 2008; Wilson & Gilbert, 2003).

When people are not aware of how their feelings have changed, they tend to overweight their currently accessible emotions (relative to how they felt in the past) in forming a wide variety of

judgments (see Levine, Prohaska, Burgess, Rice, & Laulhere, 2001; Loftus, 2005; Schwarz & Clore, 2007). In turn, without realizing that their currently accessible feelings may not represent their previous or original reactions, most people are inclined to naïvely interpret their affective reactions to stimuli “as they are”—not as they are subjectively constructed (e.g., Eibach, Libby, & Ehrlinger, 2012; Eibach, Libby, & Gilovich, 2003; cf. Ross & Ward, 1996)—and hence infer that how they feel and react in the current moment is how they have always felt and reacted (Ross, 1989).

According to the self-referential model of emotional perspective taking, insensitivity to one’s own desensitization should lead to a corresponding misunderstanding of others’ novel reactions. Because people typically judge others’ feelings first by imagining how they themselves would feel in their situation (e.g., Van Boven et al., 2013), and because people are prone to look to their currently accessible feelings for an answer (e.g., Schwarz & Clore, 2007), it follows that people who have become desensitized may be overly influenced by their currently numbed state in judging others. When a person sees the same shocking image or hears the same funny joke over and over again, not only might their own response grow less intense, but they may be unable to “backtrack” in thinking about others. Influenced by their own currently accessible emotional reaction, they might believe that someone else would also respond less intensely, even those experiencing the event for the first time. Ironically, the same self-referential process that leads a “taste” of experience to initially enhance emotional perspective taking (i.e., by thinking about one’s own experienced feelings) may be a detriment if people fail to account for how their current state has changed into a poor proxy for the state of others encountering the event for the first time. Gaining a lot of personal experience could backfire.

### The Present Research

Five experiments were designed to test the desensitization bias in emotional perspective taking: the possibility that people who encounter an emotional experience many times would not only respond less intensely themselves but also think that others would respond less intensely.

In the first two studies, we tested for the desensitization bias in terms of social prediction, as reflected in the choices that repeatedly exposed people think that others would make. We examined whether people who are exposed to images of an impressive motorcycle stunt (Experiment 1) or a shocking celebrity (Experiment 2) many times (vs. few) would predict that others who see the target image for the first time would react more strongly to a different (novel) image. Next, we explored implications for social judgment and potential implications for how people of different exposure histories actually treat one another. In Experiment 3, we examined whether people who were presented with the same funny joke many times (vs. few) would not only find it less funny themselves but also think that others would find it less funny, and if they were less likely to want to share it with others. In Experiment 4, we tested for similar effects with a negative experience—listening to aversive noise—and also tested whether desensitized people would feel less bad if others were hypothetically forced to endure it. Moreover, in both studies, we further assessed our proposed mechanism by examining whether the influence of re-

peated exposure on social judgment and behavioral intentions was mediated by one’s own desensitized reaction, in line with a self-referential judgment process.

The final experiment explored consequences for actual everyday interactions. We tested whether gaining too much emotional experience would lead people to prefer sharing novel (but objectively worse) content with others, and if unexposed others—endorsing the intuition that gaining experience helps—nonetheless believe that people who personally encountered the event many times would share better content with them (Experiment 5).

Taken together, these studies were designed to highlight theoretical as well as practical implications for emotional perspective taking and for social judgment more broadly. One important conceptual contribution we sought to provide is a more robust test of self-referential frameworks of social judgment. In previous tests of emotional perspective taking, the manipulation of similar experiences has always been compared with a “no-experience” or “irrelevant-experience” condition. In such studies, exposure to similar experiences has been shown to improve emotional perspective taking compared with these control conditions. The current studies hence pushed the theoretical bounds by exposing all participants to the same target stimuli but then providing additional similar experience for some participants. In this way, we are able to disentangle whether the personal emotional experience with the stimuli (e.g., actually feeling the pain of a loud noise in real time) or the objective informational knowledge gained from exposure to stimuli is what influences people’s predictions of others’ emotional reactions to stimuli in question. In terms of practical implications, our studies sought to explore potentially unseen costs of experience, whether too much (rather than too little) similar exposure can sometimes undermine people’s ability to treat others in appropriate ways. This observation raises novel insights into word-of-mouth contexts, and whether we should always rely on experienced others for the best advice.

### Experiment 1: Motorcycles

In the first two studies, we tested for a desensitization bias as reflected in social prediction. Specifically, we explored how gaining repeated experience with an emotion-evoking stimulus influences one’s emotional predictions of others who lack any experience with it.

In Experiment 1, we presented participants with two images, each featuring a different thrilling stunt performed on a motorcycle, and asked them to predict which image would be more impressive to people viewing the images for the first time. Before making this prediction, however, participants were repeatedly exposed to images that were similar to one or to the other type of stunt. After viewing the same stunt type over and over again, participants should become desensitized. We thus expected that participants would believe that novel others would be more impressed by an image of the stunt type that they themselves had not seen before. Finally, we also measured whether participants were aware of how repeated exposure had affected their predictions. Based on well-established research suggesting that people are largely unaware of the contextual forces that shape their decisions and judgments (e.g., Bem & McConnell, 1970; Nisbett & Wilson, 1977), we predicted that most participants would be insensitive to

the effect of repeated exposure, providing further evidence for bias.

## Method

**Participants.** Two hundred and fifty-three participants ( $M_{\text{age}} = 34.38$  years; gender and ethnicity not recorded) were recruited via Amazon's Mechanical Turk to complete an online study in exchange for \$0.35.

**Procedure.** Participants read that they would watch a slide show of motocross athletes performing different stunts of equivalent difficulty on special off-road motorcycles. Participants were randomly assigned to view a sequence of 11 images, each presented for 9 s.

In the "handstand repeated" condition, participants viewed four handstand stunts, one flying stunt, and then four more handstand stunts. In the "flying repeated" condition, participants viewed four flying stunts, one handstand stunt, and then four more flying stunts. These images filled about half the screen when presented on a 15-in. monitor.

After viewing the nine images, participants were shown two new target images: one flying stunt and one handstand stunt. Participants read the following message:

Now you will choose between the two pictures you just viewed. We are selecting a picture for someone who has NEVER seen motocross trick pictures before. Both of the tricks themselves are EQUALLY difficult. But we want to know which of these pictures would seem the most IMPRESSIVE to someone who had NEVER seen pictures like these before.

On the next page, participants were presented with the two target images on the same screen and were asked, "Which of these images would seem the most impressive to someone who had never seen pictures like these before?" Participants could select one of the two images, or an "equally impressive" option. On a second page, those who selected "equally impressive" were forced to select one of the images. Most participants sided with a clear choice on the first page. Because the majority (88%; 223 of 252) chose one of the images at the first branch, we coded all responses binomially (i.e., as selecting the flying stunt or the handstand stunt).<sup>1</sup>

Finally, to probe for awareness of desensitization, investigators asked participants to write why they selected the image they did. Any response that mentioned repetition was coded as "aware." Participants were then directly asked, "Do you think your choice between the two last pictures was influenced by the pictures you viewed earlier in the slide show?" (forced choice: yes or no).

## Results and Discussion

As expected, participants predicted that others would be relatively less impressed by whatever stunt type image that they had personally seen many times (see Table 1). Among participants who viewed the flying images many times, 69% (85 of 123) believed that the handstand stunt would be more impressive to others. In contrast, among participants who viewed the handstand images many times, only 21% (27 of 130) believed that the handstand stunt would be more impressive,  $\chi^2(2, N = 253) = 59.85, p < .001$ . Stated differently, most participants—74% (188 of 253)—

predicted that the stunt type they had not personally viewed would be more impressive to first-time viewers. This finding provides initial evidence for a desensitization bias in emotional perspective taking.

Next, we assessed desensitization awareness. As expected, most participants did not realize that repeated exposure influenced their social predictions. Less than 1% (two of 253) mentioned repetition in the open-ended measure. Thus, conceptually replicating many prior studies, people were largely insensitive to the effects of desensitization via an open-ended response. However, when directly asked if repeated exposure had influenced them, about 45% (113 of 253) said yes. Interestingly, the desensitization bias remained significant for participants who did versus did not report being influenced by repeated exposure ( $ps < .001$ ). Even when directly proposed with the possibility of the influence of repeated exposure, many "influenced" participants still did not notice the influence or adequately "correct" for it. We return to bias awareness and the effectiveness of various bias-correction strategies in the General Discussion.

One alternative explanation might be that participants who repeatedly viewed one type of stunt came to believe it was less difficult and hence less impressive, explaining their dampened predictions. Rather than emotional desensitization, participants may have "learned" something about the stimulus and used this knowledge to inform their prediction (e.g., inferring that one of the stunts is more or less difficult). Though possible, this explanation seems unlikely given that participants were explicitly told the stunts were of an equal difficulty level. Nonetheless, in the next studies, we exposed participants to the same single stimulus, such that no added information about stimuli comparisons could be learned or inferred from repeated experience.

In sum, the primary results provide initial evidence for a desensitization bias in social prediction. People who viewed many images of an exciting stunt thought others would be less impressed, even novel others who would view the stunt for the first time.

### Experiment 2: Lady Gaga

In Experiment 2, we sought to extend the findings of Experiment 1. First and most important, as a more conservative test, we examined whether people would still exhibit the bias following repeated exposure to the same single stimulus (e.g., seeing the same exact risqué billboard every day on a work commute). Because the stimuli in the first experiment varied slightly, participants could have attributed their change in feelings to objective changes in the stimuli over time. In other words, participants may not have noticed they were becoming subjectively tired of the images, which may account for why they did not "correct" for their own desensitization.

Second, we added a baseline group. In this condition, participants were shown the two target images without any prior exposure and selected which image they personally found more shock-

<sup>1</sup> When including all possible responses ( $-2 =$  flying stunt selected;  $-1 =$  flying stunt selected after selecting equally impressive;  $1 =$  handstand stunt select after selecting equal impressive;  $2 =$  handstand student selected) in the analysis, patterns remain the same. Thus, for simplicity, we report only the binomial results.



Table 1  
*Primary Results for Experiment 1 (Motorcycles) and Experiment 2 (Lady Gaga) Between Conditions: Percentage of Participants Predicting Which Image Would Be More Shocking to Others*

Variable	Experiment 1: Motorcycle images		Experiment 2: Lady Gaga images	
	Image A <sup>a</sup> (%)	Image B <sup>b</sup> (%)	Image A <sup>c</sup> (%)	Image B <sup>d</sup> (%)
Personally overexposed to Image A	31	69	55	45
Personally overexposed to Image B	79	21	79	21
No personal exposure to either image (control)	—	—	71	29

*Note.* In Experiment 1, the majority of participants predicted that novel others would be less impressed by whichever motorcycle image they personally viewed more. In Experiment 2, the majority of participants predicted that novel others would be less shocked by Lady Gaga than others actually were (control group) after they themselves viewed the images.

<sup>a</sup> Flying stunt. <sup>b</sup> Handstand stunt. <sup>c</sup> Masked Lady Gaga. <sup>d</sup> Lady Gaga in crime tape.

ing. Because they had not seen either image before, these participants' choices represented an actual "first-time" experience against which the desensitized participants' predictions could be compared. In other words, this analysis comes closer to suggesting real misperceptions of others' novel reactions, given that we can compare predictions of others' choices to what those others actually choose. Further, this condition helps address the possibility that our findings from Study 1 may reflect a preference for novel images rather than desensitization to older images per se: by comparing to a real-experience baseline, we can examine whether overexposed predictors are actually less likely to pick the personally exposed image (in line with a desensitization account) rather than more likely to choose the personally new image (in line with novelty preference).

In Experiment 2, we divided participants into one of three conditions. Participants in two treatment conditions were repeatedly exposed to one of two risqué photographs of Lady Gaga, a contemporary singer and celebrity known for shocking outfits and appearances. We hypothesized that repeatedly exposed participants would believe other people viewing for the first time (i.e., participants in the baseline condition) would find that image less shocking than they actually do.

## Method

**Participants.** Three hundred and twenty-four participants ( $M_{\text{age}} = 34.76$  years; gender and ethnicity not reported) were recruited via Amazon's Mechanical Turk to complete an online study in exchange for \$0.75.

**Procedure.** Participants completed an "entertainment survey" that included five topical sections (e.g., magazines, celebrities, technology use) separated on different screens. A banner was presented at the top of each screen, which contained images of various public figures and technological gadgets. For participants randomly assigned to the "mask-image" condition, the same shocking photograph of Lady Gaga wearing a black mask was presented within the banner on each screen; in contrast, participants randomly assigned to the "tape-image" condition were presented with the same shocking photograph of Lady Gaga dressed in crime tape within each banner. In the "first-time viewer" personal-choice condition, neither photograph of Lady Gaga was ever presented in any of the banners. All participants then pro-

ceeded to take the entertainment survey, filled with unrelated filler questions.

After completing the survey, all participants were then presented with the mask image (from the mask-image condition) and the tape image (from the tape-image condition). Participants in the two repeated-exposure conditions read: "Recently, we presented the following images to Mechanical Turk workers. We had never shown them the images before. Which image do you think more people thought was more shocking/weird?" Then, they made their choice. Participants in the personal choice condition were simply asked: "Which image of Lady Gaga do you find more shocking/weird?" Then, they made their choice. Hence, this experience matched the type of participants who were described to the "predictors" in our two exposure conditions.

Finally, as in the previous study, we probed for awareness of desensitization. Participants in the repeated exposure groups were asked: "Did anything about the survey affect your answer to the question about which Lady Gaga image more people thought was more weird/shocking?" (forced choice: yes or no). Those who answered yes were prompted to write an explanation. Participants were then explicitly informed that the same image of Lady Gaga was presented on each screen during the survey. They were asked, had they been repeatedly presented with the other image that they had not actually seen, whether they would have made a different choice.

## Results and Discussion

There was a main effect of photograph such that, across all three conditions, participants selected the masked Lady Gaga (68%) as the more shocking image. As expected, however, participants predicted that others would be relatively less shocked by whatever Lady Gaga photograph that they had personally seen many times (see Table 1). In line with the desensitization bias, predictors who first viewed the mask image many times predicted a much lower choice share (55%; 62 of 112) than participants who viewed the tape image many times (79%; 86 of 109),  $\chi^2(2, N = 324) = 14.95$ ,  $p = .001$ . Stated differently, the majority of participants (62%) predicted that the Lady Gaga image they had not personally seen many times would be more impressive to others who actually viewed both images for the first time. This finding provides further evidence for a desensitization bias in social prediction.

Although the responses of the two repeated exposure conditions may not be directly comparable with the first-time experience condition (given that the two groups answered slightly differently questions), it is noteworthy that in the first-time viewer personal-choice condition, 71% (73 of 103) of participants chose the mask image as more shocking. This number falls in between the two prediction conditions, suggesting that repeated exposure pushed participants in both repeated exposure groups away from the accurate experience—in line with our framework.

Next, we assessed desensitization awareness as in Experiment 1. Only 9% of participants (18 of 221) mentioned repetition in the open-ended measure. Similarly, when directly asked if knowledge of exposure would have changed their choice, only 15% of participants (33 of 221) said yes. Thus, as in the first experiment and in line with many previous studies, the majority of participants were largely insensitive to the effects of desensitization. Interestingly, we again found that the desensitization bias remained significant for both participants who did and did not report being influenced by repeated exposure ( $ps < .005$ ). This again suggests that even when made explicitly aware of the potential biasing effect of repeated exposure, people may not appreciate how the repeated exposure may have made them *less* accurate. We return to this possibility (and the role of other potential debiasing strategies) in the General Discussion.

### Experiment 3: Old Jokes

In the next two studies, we moved beyond social prediction (i.e., predicting what others would choose) to social judgment (i.e., actually judging how others feel). We also examined two new emotive domains and explored potential downstream behavioral implications. Finally, we also tested for further evidence regarding the self-referential process. Again, our argument posits that people exhibit a desensitization bias when judging *others'* reactions to emotional stimuli because they exhibit a desensitization bias in *their own* assessments of the event's emotional evocativeness. In other words, the effects of exposure on social judgment should be caused by desensitization in self-judgment.

We assessed this explanation in greater detail in Experiments 3 and 4 by measuring people's personal reactions, as well as their estimates of other people's emotional reactions. We predicted that the effect of repeated exposure on people's personal reactions would mediate the effect of repeated exposure on their estimates of other people's reactions. That is, we predicted that people's personal desensitization would account for the desensitization bias in emotional perspective taking by mediating the effects of exposure on social judgment and behavior.

In Experiment 3, we manipulated whether participants copied a funny joke once or five times, allegedly to procure a sample of their handwriting. We predicted that participants would be less personally amused by the joke after copying it five times (vs. once) and would thus estimate that others would be less amused by it. We also included a measure for implications of potential downstream behavior: whether participants who wrote the joke five times would be less inclined to tell it to others than would people who wrote it once.

Note that in this between-persons design, participants judged the absolute amusingness of the joke but did not directly compare an old joke with a new joke. This procedure affords a direct measure of whether the emotional intensity of the object that people experience many times is actually diminished (i.e., as reflected in lower judgments of intensity), rather than the possibility that the intensity of the novel object is enhanced, as may have occurred in Experiments 1 and 2.

### Method

**Participants.** In individual laboratory sessions, 100 undergraduates ( $M_{\text{age}} = 18.64$  years; 63% female; 69% White, 16% Asian, 5% African American, 5% multiracial, 3% other, and 2% Hispanic) participated in a randomly assigned between-subjects study on “handwriting and sense of humor” in exchange for course credit.

**Procedure.** Ostensibly to provide a sample of their handwriting, participants were first asked to copy the same joke either once or five times via pencil-and-paper format. The joke was taken from previous research on humor from a moderately funny, “nonoffensive” joke list (Hodson, Rush, & MacInnis, 2010) and read in full as follows:

A man was driving along the road when a cat darted out in front of his car. Unable to stop in time, he ran over the cat and killed it. Feeling terribly guilty, he picked up the cat and took it to the owner: a little white-haired old lady. “I’m really sorry,” he said, “but I’m afraid I’ve run over your cat. I’d like to replace it.” “Sure,” said the old lady. “How are you at catching mice?”

After copying, participants were asked, “How funny do you find this joke?” and “How funny would someone else find this joke?” Each joke was rated on a scale from 1 (*not at all funny*) to 9 (*very funny*). These items were counterbalanced across conditions. Order did not influence the significance of any result (all  $ps > .40$ ), and hence it is not discussed further. Next, as a measure of behavioral intention, participants were asked, “Would you tell this joke to others, given the opportunity?” This intention was rated on a scale from 1 (*definitely no*) to 9 (*definitely yes*). Finally, participants completed demographic questions, rated their mood from  $-4$  (*very negative*) to  $+4$  (*very positive*), and were debriefed. No participant indicated suspicion about the hypothesis.

### Results and Discussion

We excluded one participant for not writing the entire joke and one participant who reported a mood score over three times below the boxplot interquartile range (an exclusion criterion applied in all studies), leaving 98 participants for subsequent analyses.

**Self-amusement.** As predicted, participants who copied the joke five times rated the joke as less funny themselves ( $M = 3.47$ ,  $SD = 1.77$ ) than did participants who copied it once ( $M = 4.24$ ,  $SD = 1.57$ ),  $t(96) = 2.27$ ,  $p = .026$ ,  $d = 0.46$ . In fact, participants who copied the joke five times rated their mood as lower ( $M = 1.34$ ,  $SD = 1.59$ ) than participants who copied the joke once ( $M = 2.29$ ,  $SD = 0.92$ ),  $t(96) = 3.53$ ,  $p = .001$ ,  $d = 0.73$ , lending credence to their ratings that they were less amused by the joke

after writing it many times.<sup>2</sup> Participants who copied the joke five times thus appeared to be desensitized, rating the joke as less funny.

**Social judgment.** As predicted, participants who copied the joke five times estimated that other people would also find it less funny ( $M = 3.72$ ,  $SD = 1.69$ ) than did participants who copied the joke once ( $M = 4.56$ ,  $SD = 1.22$ ),  $t(96) = 2.77$ ,  $p = .007$ ,  $d = 0.57$ . This finding replicates the desensitization bias in a between-persons context (see Table 2).

Consistent with an egocentric mechanism predicted by the self-referential framework of emotional perspective taking, the effect of repeated writing on how funny participants personally found the joke ( $\beta = -.23$ ,  $p = .026$ ) statistically mediated the effect of how funny participants estimated that other people would find the joke (reduced from  $\beta = -.27$ ,  $p = .007$ , to  $\beta = -.12$ ,  $p = .104$ , 95% bootstrap confidence interval, or CI [-0.92, -0.08]; see Preacher & Hayes, 2004). And the effect of participants' personal funniness ratings on their estimates of how funny the joke would be to others was highly significant ( $\beta = .66$ ,  $p < .001$ ), controlling for condition. This analysis suggests that participants exhibited a desensitization bias in their estimates of how much hearing the joke for the first time would influence other people, because they had personally become desensitized after writing it many times.

**Behavioral intentions.** Finally, the desensitization bias was associated with people's intentions toward others. Participants who wrote the joke five times reported that they were less likely to tell the joke ( $M = 2.40$ ,  $SD = 1.68$ ) than were participants who copied it once ( $M = 3.27$ ,  $SD = 1.90$ ),  $t(96) = 2.41$ ,  $p = .018$ ,  $d = 0.49$ . Again, the effect of repeated writing on how funny participants personally found the joke ( $\beta = -.23$ ,  $p = .026$ ) statistically mediated the effect of their intentions to share the joke with others (reduced from  $\beta = -.24$ ,  $p = .018$ , to  $\beta = -.10$ ,  $p = .22$ , 95% bootstrap CI [-0.97, -0.03]). The effect of participants' personal funniness ratings on their intentions to share was highly significant ( $\beta = .62$ ,  $p < .001$ ), controlling for condition. Moreover, when regressing behavioral intentions on condition, other-funniness, and self-funniness, self-funniness was the only significant predictor ( $\beta = .57$ ,  $p < .001$ ); condition ( $\beta = -.09$ ,  $p = .28$ ) and other-funniness ( $\beta = .08$ ,  $p = .49$ ) were not significant. In other words, the likelihood that participants would have shared the joke with others seems to be egocentrically driven by how funny they themselves found it (even if they had become desensitized), rather

than by how funny they thought the other person would find it. The jokes an individual tells in everyday life may be shaped by what the joke teller finds amusing at least as much, if not more, than what the teller believes the listener would enjoy.

The results of Experiment 3 provide evidence that the desensitization bias extends to social judgment. People who repeatedly copied a joke liked it less; in turn, they estimated that other people would find the joke less funny upon hearing it, and they were less likely to want to tell it to others. It is important to note that the effects of repeated exposure on social judgment and behavior were fully mediated by self-ratings, consistent with our proposed self-referential mechanism.

#### Experiment 4: Annoying Noise

In Experiment 4, we sought to conceptually replicate Experiment 3 with a negative experience. We tested this possibility by exposing people to either a short or a long aversive vacuum noise and then asking them to estimate how annoying a clip of the noise would be to someone hearing for the first time. An additional extension is that listening to the noise requires less action on the participants' part than writing, expanding the effect away from a more "active" form of conceptual desensitization to a joke, to a more "passive" form of sensory desensitization.

We hypothesized that people who listened to the long rather than the short noise would desensitize to it, and in turn, these numbed feelings would lead people to estimate that novel others would also be less annoyed by the noise. Finally, to examine potential social consequences of the desensitization bias, we assessed empathic concern. Specifically, we asked people to estimate how badly they would feel if the other people in question were blasted by a brief sample of the noise. We predicted that people who listened to the long clip would feel less bad than those who listened to the short clip. Anecdotally, one can imagine situations in which people may inadvertently put others through painful events (e.g., fraternity hazing rituals) simply because they themselves have grown accustomed to those experiences. We sought to capture this type of problematic dynamic in Experiment 4.

#### Method

**Participants.** In individual laboratory sessions, 60 undergraduates ( $M_{\text{age}} = 18.48$  years; 55% female; 60% White, 23.3% Asian, 5% African American, 5% Indian, 3.3% Armenian, 1.7% multiracial, and 1.7% other) participated in a randomly assigned between-subjects study on "noise perception and personality" in exchange for course credit.

**Procedure.** Ostensibly to help provide a baseline reading of auditory perception, participants first listened to the same clip of vacuum noise that was either 5 s or extended to 40 s. Previous work has shown that people rate the 40-s version as less annoying than the 5-s version, because they have become desensitized (Nelson & Meyvis, 2008).

After listening, participants read the following: "In our other studies, participants partner up and play a game in which the

Table 2

Primary Results for Experiment 3 (Jokes) and Experiment 4 (Noise) Between Conditions: Means (and Standard Deviations)

Variable	Experiment 3		Experiment 4	
	Control	Desensitized	Control	Desensitized
Self	4.24 (1.57)	3.47 (1.77)	5.14 (1.75)	4.22 (1.37)
Other	4.56 (1.22)	3.72 (1.69)	5.41 (1.40)	4.59 (1.22)

*Note.* All ratings were made on 1–9 scales, with lower numbers representing decreasing intensity. In both experiments, self-ratings fully mediated the effect of condition on ratings of others. In Experiment 3, scales ranged from 1 (*joke not funny; would definitely not share with others*) to 9 (*joke very funny; would definitely share with others*). In Experiment 4, scales ranged from 1 (*noise not at all unpleasant; would not feel bad if partner had to hear; length of clip was short*) to 9 (*noise very unpleasant; would feel bad if partner had to hear; length of clip was long*).

<sup>2</sup> In addition, the effects of writing condition on self-judgment and social judgment remain significant when mood is entered as a covariate ( $ps < .05$ ). Thus, lower ratings of the joke's funniness do not appear to merely reflect a negative mood effect caused by extensive writing.



‘loser’ is exposed to a brief clip of this noise. For the following questions, imagine you were one of these participants.” Taking the perspective of the person hearing the brief clip for the first time, participants were asked to rate how unpleasant the other person would find the noise, and how unpleasant they would personally find the noise, rated on scales from 1 (*not at all unpleasant*) to 9 (*very unpleasant*). These items were counterbalanced. Order did not influence the significance of our key results (which remained significant when controlling for order,  $ps < .033$ ) and thus is not discussed further.

Participants were then asked, “Would you feel bad when your partner loses and hears the noise?” and were asked to rate their feelings from 1 (*definitely no*) to 9 (*definitely yes*), as a measure of social consequences. As a manipulation check, participants were asked, “Referring to the clip that you heard today: How long did it feel?” Participants rated their perception of the length from 1 (*it was a short clip*) to 9 (*it was a long clip*). Finally, after completing a battery of unrelated personality tests in line with the cover story, they completed demographic questions, rated their current mood on a scale from  $-4$  (*very negative*) to  $+4$  (*very positive*) and were debriefed. No participant indicated suspicion about the study’s hypothesis.

## Results and Discussion

We eliminated four participants for incorrectly following procedures (e.g., taking off the headphones prematurely), leaving 56 participants for all subsequent analyses. Regarding the manipulation check, participants indeed reported that the 40-s clip felt longer ( $M = 5.85$ ,  $SD = 1.94$ ) than the 5-s clip ( $M = 3.76$ ,  $SD = 1.96$ ),  $t(54) = -4.02$ ,  $p < .001$ ,  $d = 1.07$ .

**Self-annoyance.** First, as predicted, participants who listened to the 40-s clip thought that they would be personally less annoyed when listening to a brief clip in the future ( $M = 4.22$ ,  $SD = 1.37$ ) than participants who listened to the 5-s clip ( $M = 5.14$ ,  $SD = 1.75$ ),  $t(54) = 2.17$ ,  $p = .034$ ,  $d = 0.59$ . Participants who listened to a 40-s clip did not report significantly different mood ( $M = 1.48$ ,  $SD = 1.74$ ) than did participants who listened to a 5-s clip ( $M = 1.62$ ,  $SD = 1.82$ ),  $t(54) = 0.29$ ,  $p = .77$ ,  $d = 0.08$ . We suspect that the absence of a mood effect in this study, in contrast with Experiment 3, was because mood was measured following a lengthy set of unrelated personality questionnaires (in line with the cover story), which may have dampened any impact of condition on mood. Note that the primary dependent measures were completed before these unrelated questionnaires.

**Social judgment.** Corresponding to their self-ratings, participants who listened to the 40-s clip also estimated that other people would find a brief clip less annoying upon hearing it for the first time ( $M = 4.59$ ,  $SD = 1.22$ ) than participants who just listened to the 5-s clip ( $M = 5.41$ ,  $SD = 1.40$ ),  $t(54) = 2.33$ ,  $p = .023$ ,  $d = 0.63$ . Participants thus exhibited a desensitization bias when estimating the impact of a noxious stimulus on others (see Table 2).

As in Experiment 3, the effect of noise length on people’s estimates of personal annoyance ( $\beta = -.28$ ,  $p = .034$ ) statistically mediated the effect of noise length on people’s estimates of other people’s annoyance (reduced from  $\beta = -.30$ ,  $p = .023$ , to  $\beta = -.13$ ,  $p = .24$ ; 95% bootstrap CI [ $-1.04$ ,  $-0.07$ ]). The effect of participants’ self-predictions on their predictions of others was highly significant ( $\beta = .61$ ,  $p < .001$ ), controlling for condition.

**Empathic concern.** The desensitization bias was again associated with downstream social consequences. Participants who listened to the 40-s clip reported they would feel less bad if a losing partner was blasted with a brief clip of it ( $M = 3.22$ ,  $SD = 1.83$ ) than participants who listened to the 5-s clip ( $M = 4.38$ ,  $SD = 2.35$ ),  $t(54) = 2.05$ ,  $p = .046$ ,  $d = 0.55$ . In turn, the effect of noise length on people’s estimates of personal annoyance ( $\beta = -.28$ ,  $p = .034$ ) mediated the effect of noise length on feeling bad (reduced from  $\beta = -.27$ ,  $p = .046$ , to  $\beta = -.17$ ,  $p = .19$ ; 95% bootstrap CI [ $-1.10$ ,  $-0.004$ ]). The effect of self-predictions on feeling bad was significant ( $\beta = .34$ ,  $p = .013$ ), controlling for condition. Moreover, when regressing behavioral intentions on condition, other-annoyance, and self-annoyance, self-annoyance was the most significant predictor ( $\beta = .28$ ,  $p = .09$ ); condition ( $\beta = -.16$ ,  $p = .23$ ) and other-annoyance ( $\beta = .09$ ,  $p = .61$ ) were not significant. In other words, participants’ empathic concern for someone else’s painful experience seems to be driven by how bad they themselves would feel (even if they had desensitized to it), not how bad they think others would feel.

These results suggest that people exhibit a desensitization bias when they are exposed to extended negative experiences and that the desensitization in their own emotional reactions contributes to the desensitization in their estimates of others’ emotional reactions. Along with Experiment 3, this pattern provides additional evidence that the desensitization bias in emotional perspective taking is grounded in a change in self-judgment. Further, these results suggest that desensitization can affect feelings about social interactions and potentially affect behavior. People who became desensitized to a negative stimulus reported they would feel less bad about causing others to experience it, an effect that was again mediated by self-ratings.

## Experiment 5: Jokes and Intuitions About Those Who Tell Them

The final experiment had two aims. The first was to test whether the desensitization bias might cause people to select objectively inferior experiences on behalf of others, extending beyond hypothetical social behavior to real choices for others. Our previous studies have indicated that among stimuli of approximately equal evocativeness, people who have been repeatedly exposed to a particular stimulus believe that the novel stimulus would elicit more intense emotional reactions in other people. If so, then desensitized people may prefer to share objectively worse (but novel to them) content with others rather than objective better (but desensitized) content that people have personally seen many times.

Second, we wished to test people’s intuitions about the effect of desensitization in others, capturing the everyday dynamics that affect social interaction. Just as participants in previous studies seemed to have little recognition that they experienced the desensitization bias—and in line with the notion that personal exposure should enhance emotional perspective taking—outsiders may not recognize that others have become desensitized. Thus, they should believe that more exposed individuals would make superior (not inferior) choices. Sushi novices may reason that an experienced eater is more knowledgeable and thus better able to make appropriate sushi recommendations—at the risk of finding a chunk of (far too) exotic or spicy squid on their plate.



Experiment 5 was designed to test this idea. We first conducted a pilot test to find an objectively better joke and objectively worse joke. Next, some participants in a new sample wrote the good joke five times, becoming desensitized. Participants then selected which of the two jokes to share. In Experiment 5a, we predicted that those who wrote the good joke five times would be less likely to share the good joke than control participants.

In Experiment 5b, we described the previous experiment to a new group of people and asked them whom they would prefer to select a joke for them: participants who read the jokes only once, or participants who had to write one of the jokes many times? We predicted that this new group of participants would prefer the overexposed people to select a joke on their behalf, in line with general intuitions about the benefits of experience and people's pervasive insensitivity to the impact of repeated exposure (e.g., as observed in Experiments 1 and 2 in the current article).

### Experiment 5a: Joke Selection (Pretest)

We first pretested four jokes that were embedded in a series of other unrelated studies. The four jokes included the "catching mice" joke from Experiment 3 as well as the three other jokes from the "nonoffensive" joke list used in prior research (Hodson et al., 2010; see the Appendix). One hundred people around public campus areas were presented with a list of four jokes and were asked to choose the funniest joke. There was a clear discrepancy between the chicken (66%) and grasshopper (4%) jokes. Hence, we selected the chicken joke as our "good joke" and the grasshopper joke as our "bad joke" to be used in the main study.

#### Method.

**Participants.** In the main experiment, 60 people (age not reported; 65% female; 48.3% White, 28.3% Asian, 10% African American, 6.7% other, 3.3% Hispanic, and 3.3% multiracial) were recruited around public campus areas to participate in a study on "handwriting and humor preference" in voluntary exchange for the experimenter's appreciation.

**Procedure.** All participants were first presented with the good chicken joke and the bad grasshopper joke and were asked whether they understood them (forced choice: yes or no). Participants randomly assigned to the control condition were then asked, "Of these two jokes, which one would you rather tell others?" They then made their choice. Participants assigned to the repeated-exposure condition were told that one of the jokes had been randomly selected for them to copy so that we could get a sample of their handwriting, in line with the cover story. These participants were then presented with the good chicken joke and were asked to copy it five times. After the writing task, they indicated which of the two jokes they would prefer sharing in the same way as the control group. Finally, all participants completed demographic questions and were debriefed. No participant indicated suspicion about the experiment's hypothesis.

**Results.** As predicted, personal exposure to the good joke reduced the likelihood that people would share it with others. Only 57% (17 of 30) of the "writing" participants selected the good joke, compared with 87% (26 of 30) of participants in the control condition,  $\chi^2(1, N = 60) = 6.65, p = .01$ .<sup>3</sup> People who had extensive experience with objectively more amusing jokes thus behaved poorly toward others—at least from the perspective of

making others amused, which is presumably most joke tellers' intent.

### Experiment 5b: Intuitions

In Experiment 5b, we sought to extend the previous findings by testing whether external observers are aware of the perverse impact of repeated exposure on people's ability to make appropriate choices on their behalf.

**Method.** A separate sample of 108 participants from the same population as Experiment 5a were presented with descriptions of bogus studies that we had allegedly conducted. These participants were asked questions about their predictions of the results. For example, one of the questions read: "In one study, we randomly assigned participants to listen to a clip of rock music or a clip of rap music. Then, they tried to identify a series of musical notes played on a keyboard. Which group did you think performed better?"

Embedded in the list was a description of the joke experiment in Experiment 5. Participants read: "We also ran a study about sense of humor. 'A' participants were given a list of jokes and picked their favorite. 'B' participants were given that same list but were asked to spend more time with it, for example, by writing down one of the jokes a few times. Imagine you wanted to hear a good joke. Whom do you think would tell you the better joke from that list?"

**Results.** As expected, a clear majority—73% (79 of 108)—(mis)preferred the participants who had written the jokes many times,  $\chi^2(1, N = 108) = 23.15, p < .001$ . Observers thus sought to hear a more amusing joke from individuals who were more likely to tell the less amusing joke.

**Discussion.** Taken together, Experiments 5a and 5b show that the desensitization bias leads people who have encountered the same emotional stimuli many times to make actual inferior decisions about the stimuli to which others are exposed. But others do not recognize this bias, in that they wrongly assume extensive experience should lead predictors to provide better recommendations on their behalf. These findings suggest that first-timers may problematically trust the opinions of old-timers even when their extensive experience leads the old-timers to give worse advice.

Despite this initial evidence, future studies are warranted to more fully unpack these potential misperceptions of observers. For example, perhaps observers better appreciate the impact of desensitization when they are given more explicit information about others' prior exposure (e.g., that the list had contained exactly two jokes; that the good joke had been written exactly five times). These details may better focus observers' attention on contextual forces that differentiate their own novel perspective from that of overexperienced others.

<sup>3</sup> Regarding rates of joke comprehension, all participants in both conditions reported that they understood the funny chicken joke. In contrast, 21 participants did not understand the bad grasshopper joke, which perhaps explains why so many of our participants found the joke to be unfunny. However, it is important that the number of people who did not understand this joke did not differ between groups: 43% (13 of 30) in the control group and 27% (eight of 30) in the "writing" group,  $\chi^2(1, N = 60) = 1.83, p = .18$ . Moreover, the effect of writing on choice remained significant when controlling for comprehension in logistic regression ( $p = .031$ ).

## General Discussion

When seeking advice for exciting experiences to pursue or upsetting experiences to avoid, it seems obvious that we should turn to others who have personally been through those events—and the more experience they have, the better informed their recommendations should presumably be. Unfortunately, this intuition can lead us astray when it fails to take into account how exposure changes subjective experience. Five studies revealed that experienced perceivers (and novel observers) seem unaware of this desensitization bias in emotional perspective taking, which has diverse consequences for social prediction, social judgment, and social behavior.

When repeated exposure to emotional experiences leads people to become desensitized, they tend to believe that others would also respond less intensely—even when thinking about other people who are experiencing the event for the first time. We observed this effect for repeated exposure to exciting and shocking photographs (Experiments 1 and 2), funny jokes (Experiments 3 and 5), and noise (Experiment 4). The patterns held across valence and domain, across exposure type (e.g., exposure to a single image vs. a family of images; low-level adaptation to noise vs. conceptual adaptation to a joke), and across different outcomes (e.g., predictions of others' choices; direct judgments of others' reactions; social behavior). Finally, people are unaware of this bias: actors fail to appreciate how their own desensitized reactions might differ from the novel reactions of others, and observers believe that people with much exposure are in a privileged position to share better experiences (Experiment 5).

## Egocentrism as Process

Why are people's social judgments and behaviors susceptible to a desensitization bias? These effects on social thinking appear to be grounded in one's own experience, in line with a self-referential judgment framework of emotional perspective taking (Van Boven et al., 2013). People refer to their own feelings when making sense of others' feelings. Accordingly, failures to appreciate how one's feelings are shaped by contextual forces, in this case by desensitization, can lead to failures in distinguishing how one's own experiences differ from those of others. We found direct evidence that people are insensitive not only to *whether* repeated exposure affects their decisions (the majority believed it did not: Experiments 1 and 2), but *how* it affects them (if anything, experience was seen by observers as improving perspective taking: Experiment 5).

Hence, the same mechanism that helps provide initial benefits for emotional perspective taking may be precisely why too much exposure can backfire. A "taste" of experience boosts empathic accuracy because people use their current state as a basis to judge others ("I'm excited, so others must be excited too"). But our studies demonstrate that people *still* refer to themselves even *after* their subjective experience has changed, which can lead to naïve misperceptions of unchanged others (see also Dunning & Hayes, 1996; Eibach et al., 2003; Epley, Keysar, Van Boven, & Gilovich, 2004; Nickerson, 2001; Ross & Ward, 1996). Evidence for this self-referential process was directly provided by Experiments 3, 4, and 5. People's own reactions to funny jokes and annoying noise mediated the effect of exposure on judging how others might react to those same experiences. Self-reactions also mediated the effect

of exposure on social behavior and, in fact, were a *stronger* predictor of behavior than other-focused predictions (e.g., "How funny would others find this joke?"). These findings provide robust support for a general process rooted in the self.

## Theoretical Extensions

These findings reveal an important nuance to existing models of social judgment. Thus far, it has generally been believed that people are better at predicting others' feelings when they have had those experiences themselves, particularly with emotional states like pain and pleasure. Although some similar experience does indeed close empathy gaps in emotional perspective taking, too much experience can create new gaps between self and other when one's own affective reactions to a particular experience change over time.

This observation has theoretical importance because it helps begin to disentangle how emotional experience, versus informational knowledge, contributes to empathic accuracy. Many previous studies simply have compared a "cold state" condition (e.g., people not experiencing a noise at all) to a "hot state" condition (e.g., people experiencing a noise) and then have measured people's ability to empathize with the given situation (e.g., how bad they would feel if someone else were blasted by the noise). This method confounds the accumulation of emotional experience (hearing the noise in real time) with the accumulation of nonemotional information (knowing what the noise sounds like). Conversely, in our research, the accumulation of emotion and information are decoupled, and this decoupling is attributable to the particular temporal dynamics of emotional experience: whereas knowledge about the stimulus increases with repeated exposure, emotional response to the stimulus decreases. As seen, the emotional response dominates empathic judgment with downstream consequences for behavior. Our results hence provide the first evidence (to our knowledge) that calibration of *experience* is critically important. In fact, emotions might even override valuable information that could otherwise help desensitized people maintain richer and more representative knowledge of the situation (e.g., what that event feels like for the first time).

In highlighting the importance of experience, these findings differ from the related phenomenon of "curse of knowledge" effects, that is, the observation that informed experts in a particular domain have difficulty appreciating what it is like to be ignorant of certain information (see Camerer, Loewenstein, & Weber, 1989). Most important, the curse of knowledge occurs when people possess private information about an object (e.g., private information about an idiom's meaning, a company's performance, or the objective outcome of a battle). In contrast, the bias documented in the present experiment occurs even when factual information about the target remains constant, while the subjective response to the target shifts over repeated exposures. Whereas the curse of knowledge reflects an informational empathy gap, the effect documented in the present experiment reflects an affective empathy gap. Most likely, the inferential processes operating on these differential inputs are similar. If so, the process insights gained from studying empathy gaps may shed new light on the curse of knowledge phenomenon.

## Applications

The current studies have important implications for everyday interpersonal dynamics. What people choose to share with others, what they purchase for others, what advice they give to others, and how they treat others often depends on how they think others will react to a given experience (Fiske, 2004; Loewenstein, Thompson, & Bazerman, 1989). Thus, the consequences of a desensitization bias in thinking about others may manifest in something as innocent as sharing unfunny jokes or in more serious offenses such as failing to appreciate how much pain others are experiencing and feeling less empathy or guilt regarding their plight. People might even subject others to offensive or harmful experiences (e.g., loud concerts, a rough sport, hikes in blazing or freezing temperatures, foul language, or morally disgusting content) simply because they themselves have grown accustomed to them. Moreover, such effects of desensitization might be more inadvertent than intentional, to the extent that people who desensitize are misreading the internal experiences of unexposed others based on their own numbed states.

Similarly unfortunate, as shown in Experiment 5, unexposed others may continue to rely on affective “experts” precisely because of a lay intuition that these experts’ extensive exposure should lead them to provide better insight into what that experience is actually like (Pronin et al., 2004; Sjöberg, 2001; Stasser, Stewart, & Wittenbaum, 1995; Stewart & Stasser, 1995). Indeed, people seek out experts’ blogs to guide their own hedonic choices (e.g., unpleasant restaurants to avoid), companies hire them to test products for new customers (e.g., exciting new brands), and businesses employ them to publicize their wisdom (e.g., writing a travel guide). In fact, many policies are crafted precisely from the feedback of those who are highly experienced, such as drug campaigns that are designed by those who have desensitized and hence overcome cravings. While some experience is certainly helpful, too much experience may create a worse position from which to give advice.

The overarching belief that “experience is better” is also prevalent within social psychology. The “surrogate strategy” suggests that because people are poor at forecasting their own emotional reactions to various life events (e.g., how happy one might feel after going on a date with a particular person), they are better off relying on the opinions of others who have actually had the experience themselves (e.g., the person’s past dating partners) rather than simulating the event in their own biased minds (Gilbert, 2006; Gilbert, Killingsworth, Eyre, & Wilson, 2009). Our results suggest that this strategy only holds when surrogates have a similar exposure history, resulting in a similar emotional experience; without this prerequisite, the surrogate’s experience may be more likely to hurt than to help.

## Reducing the Bias

One important question pertains to how people—when they have been repeatedly exposed to an emotional experience—can improve their emotional perspective-taking abilities. When people are explicitly aware that they have changed in some way, or that their own experience is clearly different than that of someone else, they should be better able to see differences between self and other, hence mitigating the self-referential processes implicated in the desensitization bias (e.g., Ames, 2004; O’Brien & Ellsworth,

2012; Ross, 1989). Future research should explore strategies that allow people to appreciate the dynamic nature of their subjective reactions to emotion-evoking experiences. Affective “experts” are perhaps best served by minimizing self-weighting when thinking about others, instead choosing randomly on their behalf or considering their own preference but then choosing the opposite for particular targets.

Conversely, perhaps drawing explicit attention to one’s first exposure might be sufficient for focusing people’s attention to the contextual forces that have changed their reactions. On the one hand, interventions that invite people to consider their initial reactions to various experiences might help them better appreciate differences between self and other, as desired. On the other hand, even if people accurately recall their first exposure, they may stubbornly believe that their current reaction is more informative and reflective of the “actual” event, thus undermining the debiasing power of initial memories. Future work could fruitfully explore these possibilities.

Another answer might be to encourage predictors’ to rely more on “external” information rather than “internal” information (e.g., see Kahneman & Lovallo, 1993). A long-time usher at a comedy club is likely better off paying attention to the crowd’s general reactions rather than his own when predicting whether first-time visitors might enjoy a comedian. Similarly, advertisers would be wise to consider how the tasty menu of a new restaurant that they have been debating for months behind the scenes may be perceived differently by first-time visitors upon its launch. Notably, however, active attempts at bias correction can sometimes lead to *overcorrection* (e.g., Oppenheimer, 2004; Wegener & Petty, 1995) or general *miscorrection* (which appears to be the case in our own Experiments 1 and 2).

Of course, the effectiveness of any given strategy may ultimately depend on whether desensitization occurs gradually in more naturalistic settings, in contrast to how we induced desensitization in the current studies via a quick succession of experimental exposures. Indeed, desensitization in the real world often occurs more slowly and is spread over multiple encounters (e.g., going to a café or comedy club multiple times over the course of a year). In such situations, it may be even more difficult for people to appreciate how, why, and when their feelings have changed. The fact that we found consistent evidence for the desensitization bias in settings that may make it easier for participants to remember their first exposure suggests that real-world desensitization may be tied to even stronger insensitivity than what we observed. If so, then successful debiasing strategies may require more explicit interventions than suggested.

## Other Directions for Future Work

On a practical level, the current framework raises broad questions pertaining to the benefits and costs of gaining experience. One straightforward question is whether other kinds of subjective change are similarly neglected. For instance, people who *sensitize* to emotive events, such as acquiring tastes for beer, coffee, a song, or a television show, may *overestimate* how intense or enjoyable they are for others experiencing them for the first time (e.g., a projection of mere exposure, Zajonc, 1968). Similarly, different experiential situations might call for different judgment strategies over and beyond one’s current reaction (e.g., when people hold



clear theories about how their reactions change over time—such as an acquired taste for fine art—or whether people’s “first time” with a particular experience was especially memorable). On this note, people’s theories about reactions to more “neutral” stimuli (e.g., a nondescript television show) may invoke more stereotypical notions of sensitization and desensitization (e.g., assuming that the experience may seem relatively exciting at first, but necessarily grows tiresome over time).

On the other hand, insensitivities to subjective change may provide interpersonal benefits under certain conditions. In terms of desensitization, for example, veteran graduate students who have become accustomed to the woes of graduate school might counsel new students that “it’s not so bad”, which, in the long run, could actually help motivate new students to persist through highly stressful early years. After all, new students will eventually become experienced students. Future work should examine this intriguing implication in greater detail.

Finally, future research could also explore in more detail the processes by which egocentrism specifically operates. For instance, people may draw upon their current single desensitized state (“This noise isn’t annoying right at this moment”), but they may also compute a rough average of all of their extended experiences, which would be necessarily weighed down by gradual decreases in intensity (“Overall, my experiences with this noise weren’t too bad”). Although both processes are rooted in the self and produce a dampened prediction of novel others—in line with our current framework—teasing the two apart could yield novel insights into which particular debiasing strategies would be most effective across different types of situations.

## Concluding Thoughts

People inevitably possess varying levels of life experience. It is generally believed that the richer one’s experiential history with a given situation, the better off he or she will be in thinking about how that situation might impact others. Indeed, people who frequently attend fun comedy clubs and exciting rock concerts should be in a privileged position to recommend which shows to attend. But the five experiments reported here suggest an important boundary. Gaining *too much* experience can backfire: when people experience a similar emotional event over and over again, not only might their own sensitivities change but also their perceptions of others’ sensitivities. This observation has important consequences for our decisions and choices on behalf of others, as well as what we think others feel, and how we ultimately treat them. And as advice seekers ourselves, these findings pose important implications regarding whom we come to rely on for the best possible recommendations. Although some shared experience can certainly enhance empathic accuracy, the timeless advice of Atticus Finch may warrant a caveat. The interpersonal benefits of having walked a mile in someone else’s shoes might sometimes generate diminishing returns for every step thereafter.

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## Appendix

### Pretest Results of the Percentage of People Who Chose Each Joke as the Funniest From the List Provided

Joke (from Hodson, Rush, & MacInnis, 2010)	% of participants who chose joke as funniest
Chicken joke: A man went for a meal at a chicken restaurant. He asked the manager, "How do you prepare the chickens?" The manager said, "We just tell them straight out that they're going to die."	66
Cat joke: A man was driving along the road when a cat darted out in front of his car. Unable to stop in time, he ran over the cat and killed it. Feeling terribly guilty, he picked up the cat and took it to the owner: a little white-haired old lady. "I'm really sorry," he said, "but I'm afraid I've run over your cat. I'd like to replace it." "Sure," said the old lady. "How are you at catching mice?"	21
Elephant joke: What do you call two elephants on a bicycle? Optimistic.	9
Grasshopper joke: A grasshopper walked into a bar. The bartender said, "Hey, we have a drink named after you." The grasshopper said, "You have a drink named Marlon?"	4

*Note.* For the main experiment in Experiment 5, we used the most selected option (chicken joke) as our good joke and the least selected option (grasshopper joke) as our bad joke.

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