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Different faces of empathy: Feelings of similarity disrupt recognition of negative emotions☆

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ABSTRACT

Empathizing with others is widely presumed to increase our understanding of their emotions. Little is known, however, about which empathic process actually help people recognize others' feelings more accurately. Here, we probed the relationship between emotion recognition and two empathic processes: spontaneously felt similarity (having had a similar experience) and deliberate perspective taking (focus on the other vs. oneself). We report four studies in which participants (total $N = 803$) watched videos of targets sharing genuine negative emotional experiences. Participants' multi-scalar ratings of the targets' emotions were compared with the targets' own emotion ratings. In Study 1 we found that having had a similar experience to what the target was sharing was associated with lower recognition of the target's emotions. Study 2 replicated the same pattern and in addition showed that making participants' own imagined reaction to the described event salient resulted in further reduced accuracy. Studies 3 and 4 were preregistered replications and extensions of Studies 1 and 2, in which we observed the same outcome using a different stimulus set, indicating the robustness of the finding. Moreover, Study 4 directly investigated the underlying mechanism of the observed effect. Findings showed that perceivers who have had a negative life experience similar to the emotional event described in the video felt greater personal distress after watching the video, which in part explained their reduced accuracy. These results provide the first demonstration that spontaneous empathy, evoked by similarity in negative experiences, may inhibit rather than increase our understanding of others' emotions.

1. Introduction

Accurately understanding others' state of mind is crucial for efficient management of social life (Fischer & Manstead, 2016), and is considered to be an important component of emotional intelligence (Salovey & Maier, 2005). The ability to correctly infer the content of another person's thoughts and feelings is generally referred to as *empathic accuracy* (Ickes, Stinson, Bissonnette, & Garcia, 1990; Zaki, Bolger, & Ochsner, 2008). What determines someone's empathic accuracy, that is, whether they can accurately understand another person? Research has highlighted several characteristics of the perceiver and target that influence empathic accuracy, including the emotional expressivity of the target, and the information available to the perceiver about what triggered the target's emotion (Zaki et al., 2008; Zhou, Majka & Epley, 2017; see review by Hodges, Lewis, & Ickes, 2015). The focus of the current paper is to test the role of the perceiver's own emotional processes in empathic accuracy. Specifically, we examined the contribution of two routes that have been identified in previous research on empathy: (a) *similarity in experience*, which refers to a relatively spontaneous and implicit process whereby the perceiver's own emotional memories of a similar event are triggered, and (b) *perspective taking*, a route that constitutes a more explicit and deliberate process of imaging one's own or the other's emotional reaction to a given event. Past research has found that both of these processes relate to perceivers' *affective reaction* to others' feelings (e.g. Batson et al., 1997; Israelashvili & Karniol, 2017; Perry, Hendler, & Shamay-Tsoory, 2011; Stotland, 1969). The current research examines whether these processes also affect perceivers' recognition of others' emotional states.

2. Similarity in experience

One route that can elicit empathic reactions in the perceiver is shared experiences (Preston & de Waal, 2002; Stotland, Sherman, & Shaver, 1971; Zaki & Ochsner, 2015). This relatively implicit process, often referred to as *experience sharing*, involves the tendency of the perceiver to take on the sensorimotor, visceral and affective states of

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the other individual (Zaki & Ochsner, 2012). Previous research has supported the general notion that perceived similarity with another's experience facilitates experience sharing and is associated with stronger feelings of empathy (e.g., Israelashvili & Karniol, 2017; Silverman, Gwinn, & Boven, 2015). Moreover, according to the Perception-Action Model (Preston & Hofelich, 2012), observers without similar experiences do not even have the necessary representations to allow meaningful processing of the emotional state of the other person. To date, only one study has directly investigated the relationship between similar life experiences and emotion recognition. Hodges, Kiel, Kramer, Veach, and Villanueva (2010) showed that perceivers who had experienced the same life events as the targets (giving birth to a baby) were no more accurate in predicting the targets' actual feelings than individuals who had not. However, the study had a relatively small sample size and accuracy was estimated without a priori criteria. Furthermore, two recent studies have shown that participants who received more information about what caused other's feelings were more accurate in judging their emotional states from facial expressions (Israelashvili, Hassin, & Aviezer, 2018; Zhou, Majka & Epley, 2017). On the basis of the conceptual importance of similar experiences in triggering experience sharing and the benefit found for having access to relevant information, we therefore hypothesized that having had similar experiences would be associated with increased accuracy in recognizing others' emotions.

3. Perspective taking

A complementary route to similarity in experience that can also elicit empathic reactions in the perceiver is perspective taking. Perspective taking has been defined as a deliberate attempt to understand others' thoughts and feelings by trying to take another person's psychological perspective (e.g., Stueber, 2006). Although perceivers may engage in perspective taking spontaneously (Hawk, Fischer, Van Kleef, & Phelps, 2011; Israelashvili & Karniol, 2018; Preston & de Waal, 2002; Thornton, Weaverdyck, & Tamir, 2019), perspective taking is a cognitively demanding task that generally involves deliberate effort (Epley, Keysar, Van Boven, & Gilovich, 2004). Specifically, taking the other's perspective initially involves anchoring the other person's experience to one's own perspective, but given time and motivation, perceivers subsequently conduct serial adjustments to account for differences between themselves and others (Epley et al., 2004 see also Cowen & Keltner, 2017; Thornton, Weaverdyck, Mildner, & Tamir, 2019).

Taking another person's perspective is widely presumed to enhance our ability to understand another's emotional state. Yet, recent research has cast doubt on whether perspective taking in fact improves empathic accuracy. Eyal and colleagues, for example, found that instructions to take the perspective of the other increased the time spent making judgments in several emotion recognition tasks, but did not improve accuracy (Eyal, Steffel, & Epley, 2018). These results indicate that recognizing others' emotions requires having relevant information that is not simply acquired by the instruction to take the other's perspective.

There is, however, more than one kind of perspective taking: One can imagine oneself in the situation of the other (i.e., Self-focus), or one can attempt to put oneself in the shoes of the other (i.e., Other-focus). This difference in focus has been shown to lead to divergent emotional reactions (Hodges et al., 2015). Focusing on one's own imagined emotional reaction (elicited by instructing participants to put themselves in the situation of the distressed other) generates not only empathy, but also negative thoughts and feelings of distress (e.g., Davis et al., 2004; Lamm, Batson, & Decety, 2007; Stotland, 1969). This aversive emotional reaction is also characterized by a physiological pattern of threat (i.e., negative arousal; Buffone et al., 2017) and a brain pattern similar to experiencing pain (Jackson, Brunet, Meltzoff, & Decety, 2006). In contrast, a focus on the other, (elicited by instruction to focus on imagining how the other person would feel or feels), generates empathy, sympathy, and concern for the other, without accompanying feelings of personal distress (Batson et al., 1997; Davis, 1983; Eisenberg et al., 1994). In addition, a focus on the other's feelings is associated with a physiological pattern linked to feelings of challenge (Buffone et al., 2017), rather than feelings of threat.

This difference in focus (i.e., a focus on oneself vs. on the other) has not been studied in relation to the ability to actually recognize how the other person is feeling. How do these different foci relate to emotional accuracy, that is, the extent to which the perceiver's recognition of the target's emotions is congruent with the target's actual emotional experience (for similar definitions see Coll et al., 2017; Zaki et al., 2008)? Based on the Anchoring and Adjustment Model (Epley et al., 2004), a focus on the other, rather than on oneself should have a positive effect on emotional accuracy because it reduces reliance on an egocentric perspective, a known source of judgment error. Based on this model, a focus on the other, rather than on oneself should thus improve emotional accuracy. This prediction is also consistent with previous findings showing that Self-focus generates more feelings of distress than Other-focus, as distress may be a distraction to the focus of attention on the other's emotional state (e.g., Batson et al., 1997; Buffone et al., 2017; Israelashvili & Karniol, 2018; Israelashvili, Sauter, and Fischer, under review; Perry et al., 2011). We thus hypothesized that Self- (vs. Other-) focus would be associated with less accurate emotion recognition.

4. The present research

The goal of the current research was to study the relationship between two routes to empathy and emotion recognition. Specifically, we probed both deliberate perspective taking (Self- vs. Other-focus) and similarity in shared experience in relation to accurate emotion recognition of spontaneous expressions of negative emotions. In this paper we focus on empathy in reaction to negative emotions, which is consistent with the extensive literature on empathy as responses to another person's *plight* (e.g. Batson, 2009; Eisenberg & Strayer, 1987; Hoffman, 1975; Preston & Hofelich, 2012). Participants (perceivers) were instructed either to imagine themselves in the target's situation (Self-focus) or to focus on the feelings of the target in the situation (Other-focus). Then they were asked to identify the emotions that the targets expressed in video clips. Using the targets' independent ratings of their own emotions enabled us to calculate emotion recognition accuracy, operationalized as the similarity between each target's and perceiver's emotion ratings.

We hypothesized that: (1) Perceived similarity in experience, as reported by the perceiver, would be associated with better emotion recognition accuracy; (2) Participants who were instructed to focus on the target in the situation (Other-focus) would show increased emotion recognition accuracy, compared to participants who were instructed to imagine *themselves* in the target's situation (Self-focus). We also sought to explore how these two factors would interact and jointly affect emotion recognition, but given the dearth of research on this topic we did not make a priori predictions about potential interaction effects.

These hypotheses were tested in four studies. In Study 1, we manipulated perspective taking by giving participants instructions to either focus on themselves or on the target, and we measured the extent to which they had experienced something similar to the story reported by the target in each video. Participants rated each target's feelings based on watching a video of them sharing an emotional event. Study 2 was a replication and extension of Study 1, in which participants rated both the target's feelings (as in Study 1), as well as their own feelings if they would have been in that situation. Reporting their own emotions was added to Study 2 as a different and more implicit way of focusing on one's own feelings before participants were asked to judge the target's emotions. Study 3 was a preregistered replication and extension of Studies 1 and 2, aiming to test whether the pattern of findings obtained in the two earlier studies would be replicated with a new set of stimuli and with the addition of a control condition in which participants

received no perspective-taking instructions at all. Study 4 was a pre-registered replication and extension of Studies 1–3, in which we directly investigated the underlying mechanism of the main research findings. All measures, manipulations, and exclusions are reported below.

5. Study 1

In Study 1, participants watched targets sharing an emotional event and were instructed to either (a) imagine how they would feel if the situation would have happened to them (Self-focus), or (b) imagine how the target person in the video felt (Other-focus). In addition, we asked the participants whether they had had a similar experience to the one described in the video as a measure of similarity of experience.

5.1. Method

5.1.1. Participants

Participants were 207 US citizens (M_{age} = 37, SD_{age} = 11; males - 51%) who were recruited via Amazon Mechanical Turk in May 2017. The sample size was determined based on a G-power analysis, according to which a sample size of 100 participants per cell with a total of 3 predictors in the regression model would provide a power of 0.80 to detect ($\alpha = 0.05$) a small to medium effect ($f^2 = 0.05$). The post-experimental observed power was 0.975. Informed consent was obtained from all participants and the procedure was approved by the Ethics Committee of the University of Amsterdam. We did not exclude any participants from any analyses. The description of the study was to "*view people in various videos and rate their emotions*". Each participant received 1$ remuneration.

5.1.2. Design and procedure

Participants watched four video clips in a random order. Each video was between two and three minutes long, and each consisted of an English-speaking female in her early 20s freely describing a genuine emotional autobiographical experience. The targets were asked to share an emotional experience that they felt comfortable sharing, and were free to choose the content of the experience. The topics of the four videos were: (1) fear of breakup, (2) signs of a partner cheating, (3) reverse culture shock, and (4) fighting with a parent. The videos were selected from a convenience sample of videos depicting people sharing real emotional experiences. The four targets gave full permission to use their videos for scientific research (for full transcriptions of the videos see Supplementary materials). In a pre-study (see Israelashvili & Satpute, 2017), all targets reported having average to high levels of self-reported expressivity on the 10-item Berkeley Expressivity Questionnaire (BEQ; Gross, 2000), which measures respondents' sense of how much their emotional experience is visible to other people (e.g., "Whenever I feel positive emotions, people can easily see exactly what I am feeling"). Further, each target showed sufficient variability in the reported intensity of her emotions (the variance between the emotions ranged from 2 to 6 intensity points for each target). We included only female targets because previous research has found that women tend to share their feelings more often than men (e.g., Rimé, Mesquita, Boca, & Philippot, 1991). The events shared focused on negative experiences because recent findings found that accurate interpersonal recognition of negative emotions is more important for social relationships than is accurate recognition of positive emotions (for meta-analysis see: Sened et al., 2017).

Half of the participants were instructed to watch the video while imagining how they *themselves* would have felt if they were in the situation (Self-focus condition), the other half were instructed to imagine how the *other* person (i.e., the target) in the video felt in the situation (Other-focus condition). After the participants watched each video, they were asked to rate the intensity of the emotions that the target person in the video may be feeling, using the same scales as the targets had rated their feelings on after they shared their stories. Next, the participants were asked whether they had had a similar experience to the one narrated in the video[1].

5.1.3. Instruction manipulation

5.1.3.1. Self- vs. Other-focus. Participants were randomly assigned to one of two perspective taking instructions, which were modeled after Batson et al. (1997), and have been validated in previous research (e.g., Davis et al., 2004). In the "*self-focus*" condition, participants were given the following instructions before watching the videos: "While the video is playing, try to imagine how you would feel if you were in that person's situation, and if this situation had happened to you. Try not to concern yourself with attending to all the information presented. Just concentrate on trying to imagine how you would feel if you were in that situation". Participants in the "*other-focus*" condition received the following instructions before watching the video: "While the video is playing try to imagine how the person (i.e., the target) in the video feels about what has happened to her and how it affected her life. Try not to concern yourself with attending to all the information presented. Just concentrate on trying to imagine how the person in the video feels".

5.1.4. Measures

5.1.4.1. Similarity in experience. To measure whether participants had experienced similar situations to the one that each target was discussing, we posed the following question after each video clip: "How familiar are you with the experience described in the story (e.g., it has happened to me, or to someone I know)[2]?". Answers were given on a 7-point Likert scale, ranging from (0) *not at all*; to (6) *completely*. Averaging the answers across the four videos yielded a *Similarity in Experience Index*. The average similarity in experience in Study 1 was 1.90 (SD = 1.31; Cronbach's $\alpha = 0.66$).

5.1.4.2. Emotional Intensity. Participants were asked to rate the intensity with which they thought the target experienced each of ten emotions (anger, rage, disappointment, fear, sadness, worry, confusion, surprise, embarrassment, and guilt) after each of the four videos. Answers were given on a 7-point Likert scale, ranging from (0) *not at all*; to (6) *very much*. An emotional intensity index was calculated by averaging the intensity ratings across all emotions and all videos, in order to create a measure of the intensity of emotions that participants attributed to the targets (for a similar approach see Erbas, Sels, Ceulemans, & Kuppens, 2016). The average intensity in Study 1 was

[1] When asking participants about their familiarity with the situations, we chose to adopt a relatively general approach. Our question therefore did not exclusively refer to self-experience, but also included familiarity with the experience through acquaintances. This decision is based on the fact that several processes lead to social learning (Bandura, 1978): People can learn a great deal about emotions on the basis of second-hand experiences, for example when they see emotional events happening to others or when others talk about emotional experiences with them (see e.g., Fischer (2019). From this perspective, whether the situation had happened to the participant themselves or to a friend or family member is secondary. Yet, to examine whether an explicit focus on self-experience would show a different pattern of findings, we mentioned only first-hand experience in Studies 3 and 4 and obtained the same pattern of results.

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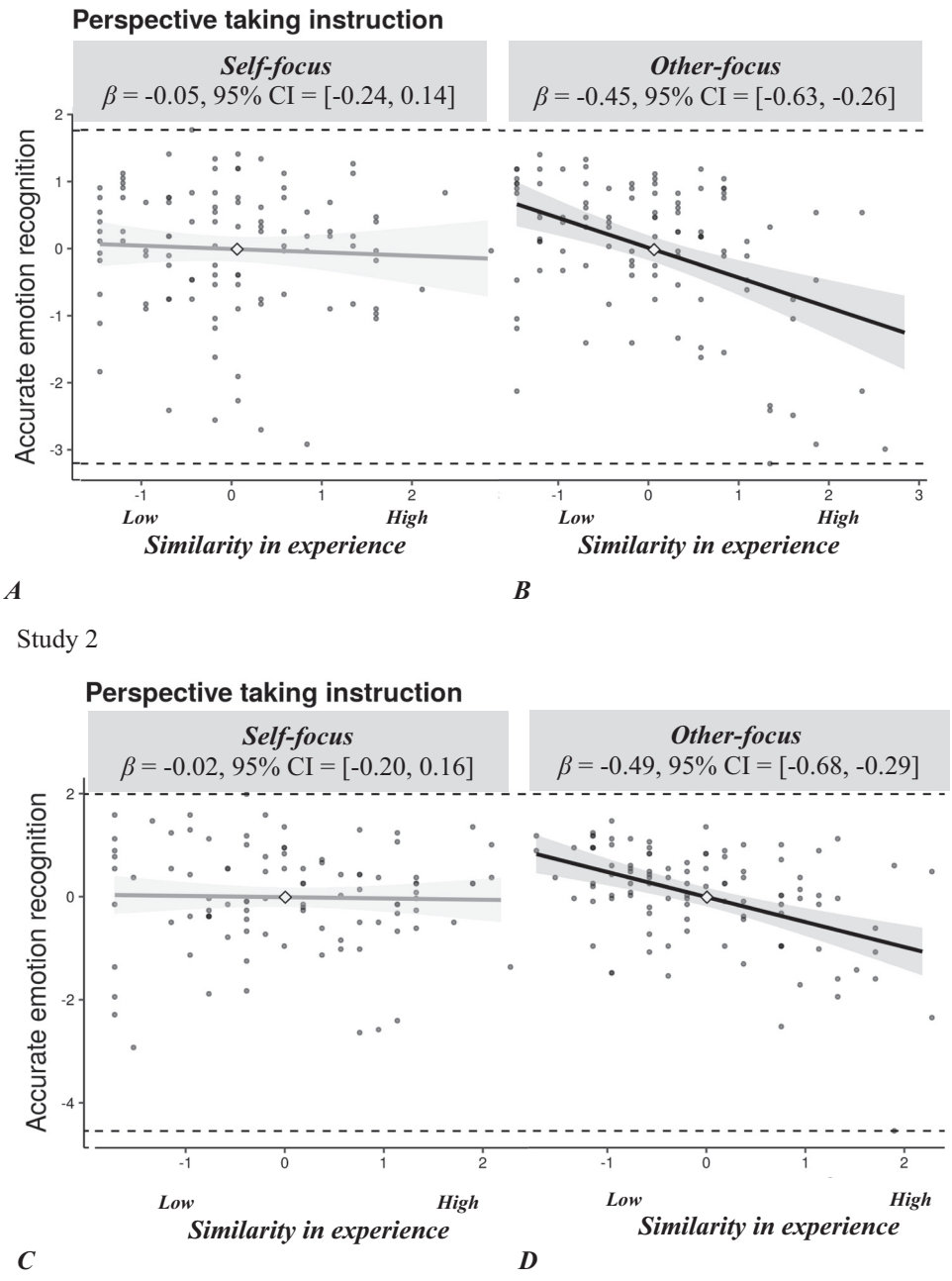

Fig. 1. Accurate (standardized) emotion recognition as a function of similarity in experience (standardized), illustrated for Self-focus (left) and Other-focus (right) conditions for Study 1 (upper panel) and Study 2 (lower panel).
Note. Slopes are printed bold when significant ($p < .001$). Accurate emotion recognition operationalized as the absolute difference between participants' ratings and the targets' own ratings across the ten emotions averaged across all targets, reversed and standardized (such that a higher index reflects more accurate emotion recognition). Each graphic shows the computed 95% confidence region (shaded area), the full range of the observed data (gray circles) and the threshold at which the association between similarity in experience and emotion recognition changes as a function of condition (diamond). CI = confidence interval. The illustration was created using interActive software (McCabe, Kim, & King, 2018).

1.90 (SD = 0.82).

5.1.4.3. Accurate emotion recognition. The major outcome variable was defined and operationalized as accurate recognition of the target's emotional state from each video clip. To assess accuracy, we contacted each of the targets (approximately one year after their video was recorded) and asked them to watch their own video again and to rate the emotions that they had felt in that video. The targets rated the intensity of their own emotions on the same list of emotions as did the participants (see above). One target did not respond to our request and hence the related data (i.e., participants' ratings relating to this video) were omitted from all data analyses. Thus, for the three targets that completed the rating task, accuracy was calculated based on the absolute difference between participants' ratings and the target's own ratings, across each one of the ten emotion rating scales (larger absolute differences indicate lower accuracy; for a similar approach see: Zhou, Majka & Epley, 2017; Eyal et al., 2018). We used the average accuracy score across all three targets as the unit of analysis, consistent with previous research on empathic accuracy and emotion recognition (e.g., Zaki et al., 2008; Eckland, Leyro, Mendes, & Thompson, 2018; Mackes et al., 2018). Finally, to simplify the interpretation of this index, the average absolute difference was reversed (−1* average absolute difference), such that a higher index reflects more accurate emotion recognition.

5.2. Results

5.2.1. Preliminary analyses

5.2.1.1. Similarity in experience. As a preliminary analysis, we examined whether the two perspective taking conditions differed in their baseline levels of similarity with the emotional experiences used in the study. An independent *t*-test with similarity in experience as the

dependent variable, and Self-vs. Other-focus as an independent variable yielded no significant difference, $t(205) = 0.21$, $p = .84$, *Cohen's* $d = 0.03$, suggesting that perceived similarity in experience was equally represented in the Self-focus condition (M = 1.89, SD = 1.30) and in the Other-focus condition (M = 1.93, SD = 1.32).

5.2.1.2. Emotional intensity. To test the impact of perspective taking instructions on emotional intensity, we conducted an independent t-test with emotional intensity as the dependent variable and the Self- vs. Other-focus as the independent variable. The results showed no significant difference, t(205) = 0.05, $p = .96$, Cohen's d = 0.01, between the level of emotional intensity reported in the Self-focus condition (M = 1.91, SD = 0.81), compared with the Other-focus condition (M = 1.92, SD = 0.86).

5.2.2. Hypothesis testing

5.2.2.1. Emotion recognition accuracy. Initial analyses indicated that accuracy varied greatly (with average absolute difference scores ranging from 8 to 31; M = 16.17, SD = 4.64), which allowed us to examine whether this variance was predicted by similarity in experience and/or perspective focus.

To test the possible combined effect of individuals' experience of similar situations and focus upon accurate emotion recognition, we performed a hierarchical linear multiple regression analysis. In this analysis, similarity in experience, perspective taking, and their interaction were predictors and the mean absolute difference (reversed) score was the dependent variable. In the first step, we entered into the model Similarity in experience (mean centered) and the dummy-coded variable of Perspective taking (Self-focus = 1, Other-focus = 0), while in the second step, their interaction component was added. The significance of all of the effects was assessed with the bootstrap technique, with 5000 samples (Efron & Tibshirani, 1993) using PROCESS macro (model 1, Hayes, 2013). The final model was significant and explained 10% of the variance in accurate emotion recognition, $F(3, 203) = 8.83$, $p < .001$, $R^2_{adj.} = 0.09$. Results indicated that Perspective taking had no main effect on accuracy, $\beta = -0.01$, 95% CI [−0.286, 0.237], $t = -0.19$, $p = .85$. However, similarity in experience was associated with reduced accuracy, $\beta = -0.45$, 95% CI [−0.629, −0.261], $t = -4.77$, $p < .001$. Moreover, a significant similarity in experience with Perspective taking interaction effect was found, $\beta = 0.28$, 95% CI [0.133, 0.658], $t = 2.97$, $p = .003$, $\Delta R^2 = 0.035$. Fig. 1 illustrates this interaction effect, using simple slope analysis to predict the relation between similarity in experience and accurate emotion recognition (i.e., reversed mean absolute difference score), for Self- vs. Other-focus conditions. The results show that similarity in experience was strongly ($\beta = -0.45$) related to reduced accuracy for participants in the Other-focus condition, while similarity in experience was unrelated to the level of emotion recognition accuracy in the Self-focus condition.

5.3. Discussion

We expected that having had a similar experience as the target would provide people with relevant information about the target's emotions, and would thus be positively associated with accurate emotion recognition. We also expected that instructing participants to focus on the other's perspective would help them to recognize others' emotions. The results of Study 1, however, did not confirm these hypotheses. Instead, we found that trying to imagine a situation from the perspective of another person did not help participants to recognize how the other felt. Similarity in experience also did not improve emotion recognition accuracy, but was in fact associated with poorer emotion recognition. This finding suggests that being reminded of one's own emotions in a similar situation can hinder one's ability to correctly identify others' emotions. Interestingly, this negative relation was not found when participants deliberately tried to focus on their own perspective. In that case, similarity in experience was unrelated to participants' ability to accurately recognize the target's emotions. One explanation for this finding could be that participants in the Self-focus condition always focused on their own feelings, and tried to imagine how they would react, unrelated to whether or not they actually had had similar experiences. On the other hand, participants in the Other-focus condition may have found it too difficult to focus on the other's perspective when their own emotions in a similar past situation were salient.

The dearth of previous research using explicit perspective taking instructions in the context of sharing similar experiences renders the current findings difficult to interpret. To examine whether these findings are robust, we conducted a second study, aimed to replicate the findings from Study 1, using a different cohort, and slightly adjusted methods and stimuli.

6. Study 2

Study 2 was conducted to replicate Study 1, but employing a somewhat different task and experimental design. As in Study 1, participants watched female targets sharing an emotional event, and were instructed to either (a) focus on how they would feel if the situation would have happened to them (Self-focus), or (b) focus on how the target person in the video felt (Other-focus). We expected to find the same pattern of results as in Study 1. Specifically, we predicted that similarity in experience would show a negative correlation with accuracy, similar to the main effect obtained in Study 1. We also expected that when participants had had a similar experience in the past, instructions to imagine the other's perspective would reduce the level of accurate emotion recognition (i.e., an interaction effect). Finally, we did not have any hypothesis related to a difference between the perspective taking instructions, given the non-significant main effect observed in Study 1.

In order to examine the role of one's own emotions on recognizing others' emotions, we added an additional exploratory factor, by asking half of the participants to report on their own feelings first, before rating the targets' emotions. We reasoned that reporting on their own feelings first would make their own emotions salient, and might therefore diminish emotion recognition accuracy in the same way as being spontaneously reminded about similar experiences. In both cases, thinking about one's own emotions may interfere with participant's attention to targets' emotions. The manipulation thus consisted of two different sequences of emotion ratings: either starting with rating one's own emotions, or starting with rating the target's emotions. This sequence of emotion ratings was counterbalanced and controlled across all analyses.

6.1. Method

6.1.1. Participants

Participants were 201 US citizens ($M_{age} = 38$, $SD_{age} = 13$; 40% men), who were recruited via Amazon Mechanical Turk (Mturk). The sample size was determined based on the same power consideration as in Study 1, suggesting that this sample size in regression analysis with 3 predictors and the standard criteria ($\alpha = 0.05$; 1- $\beta = 0.80$) would be sufficient to detect a small to medium effect ($f^2 = 0.05$). All data collected were included in the analyses. The post experimental observed power was 0.931. The description of the study was "*watch people in various videos and rate their emotions*". Each participant received 1$ in remuneration.

6.1.2. Design and procedure

Study 2 used the same design as Study 1, with the following changes. First, the video that had to be omitted from the statistical analyses in Study 1 (as we were unable to get self-ratings by the target) was replaced by a new, similar video with a female target who provided ratings of her own emotions (the emotional story was about stigma of

mental illness rather than fear of breakup). Second, in addition to rating the emotions of the targets, the participants were asked to rate what emotions they would feel themselves if each of the events in the videos would happen to them. Both types of emotion ratings (for the self and the target) were administered for the same list of ten emotions used in Study 1. The rating sequence of the self- and other- emotions ratings was counterbalanced across participants.

6.1.3. Measures

We used the same measures as in Study 1: Similarity in experience, emotional intensity (but in this study both for the participant's own and the target's emotions), and accurate emotion recognition.

6.2. Results

6.2.1. Preliminary analyses

6.2.1.1. Similarity in experience. Consistent with the findings in Study 1, the two perspective taking conditions did not differ in their baseline levels of similarity with the emotional experiences used in the study, $t(199) = -0.50$, $p = .62$, Cohen's d = −0.07, suggesting that similarity was equally represented in both experimental conditions (Self-focus: M = 2.30, SD = 1.38; Other-focus: M = 2.21, SD = 1.30). The average similarity in experience in Study 2 was 2.26 (SD = 1.31; Cronbach's α = 0.64), which was significantly higher, $t(406) = 2.78$, $p = .006$, Cohen's d = 0.27, than the average level of similarity found in Study 1 (M = 1.90, SD = 1.31).

6.2.1.2. Emotional intensity. To test the impact of Self- vs. Other-focus on emotional intensity, we conducted a two-way analysis of variance (ANOVA) with repeated measures, with Self- vs. Other-focus as the between subject factor and the Self-ratings vs. Other-ratings as the within subject factor, and emotional intensity as the dependent variable. The results showed the same pattern as in Study 1, with no difference found between Self- vs. Other-focus, $F(1, 197) = 0.02$, $p = .88$, $\eta_p^2 = 0.00$. However, the Sequence of ratings by the participants did affect emotional intensity judgments, $F(1, 197) = 4.62$, $p = .03$, $\eta_p^2 = 0.02$. As shown in Fig. 2, participants who first reported their own feelings rated target's emotions as more intense than participants who first rated the target's feelings. The interaction between Focus instructions and Sequence was not significant, $F(1, 197) = 0.22$, $p = .64$, $\eta_p^2 = 0.00$.

6.2.2. Hypothesis testing

6.2.2.1. Emotion recognition accuracy. Initial analyses indicated that individual accuracy varied considerably (with average absolute difference scores ranging from 10 to 39; M = 19.10, SD = 4.32).

Similar to Study 1, we performed a hierarchical linear multiple regression analysis to test whether similarity of experience and Perspective taking would lead to more accurate recognition of others' emotions. We entered Perspective taking (Self- vs. Other-focus), Sequence of emotion ratings (Self-first, Other-first), Similarity in experience and the interaction between Perspective taking and Similarity in experience as predictors, and accuracy of emotion recognition as the dependent variable. In the first step, we entered Similarity in experience (mean centered), the dummy-coded variable of Perspective taking instruction ($d1$: Self-focus = 1, Other-focus = 0), and the dummy-coded variable of rating sequence ($d2$: Self-first = 1, Other-first = 0) into the model. In the second step, the interaction components were entered. The significance of all effects was assessed by the bootstrap technique, with 5000 samples (Efron & Tibshirani, 1993). The model was significant and explained 13% of the variance in accurate emotion recognition, $F(4, 196) = 7.56$, $p < .001$, $R^2_{adj.} = 0.12$). The results of the regression analysis indicated that, as in Study 1, Perspective taking instructions had no main effect on accuracy, $\beta = -0.01$, 95% CI [−0.265, 0.259], $t = -0.02$, $p = .98$, whereas Similarity in experience was associated with reduced accuracy, $\beta = -0.49$, 95% CI [−0.677, −0.293], $t = -4.99$, $p < .001$.

Also in line with Study 1's findings, the interaction between Similarity in experience and Perspective taking was significant, $\beta = 0.37$, 95% CI [0.198, 0.724], $t = 3.46$, $p < .001$, $\Delta R^2_{adj.} = 0.05$. Following the pattern of Study 1, similarity in experience was strongly ($\beta = -0.49$) associated with reduced accuracy, but only if participants were instructed to imagine the other's perspective. Similarity in experience was unrelated to the accuracy of emotion recognition in the Self-focus condition (see Fig. 1 for illustration and statistics). Further, the Sequence of reporting self vs. others' emotions also had a significant effect, $\beta = -0.17$, 95% CI [−0.598, −0.074], $t = -2.53$, $p = .01$, indicating that participants who were asked first to report on their own feelings were less accurate in emotion recognition (M = −19.77, SD = 4.79), compared with participants who had first rated the targets' feelings (M = −18.46, SD = 4.79). Fig. 3 illustrates this main effect.

6.3. Discussion

The results of Study 2 fully replicated the findings obtained in Study 1. When participants had experienced similar events to those described by the targets, the instruction to focus on the other's perspective was associated with poorer emotion recognition. The mere instruction to imagine oneself in the other's situation, however, was unrelated to the perceiver's ability to recognize the target's emotions. Study 2 also showed that the accuracy of recognition of the target's emotions was lower when participants were instructed to report their own feelings in a situation similar to that of the target before they made judgments about the feelings of the targets. Both patterns of findings suggest that

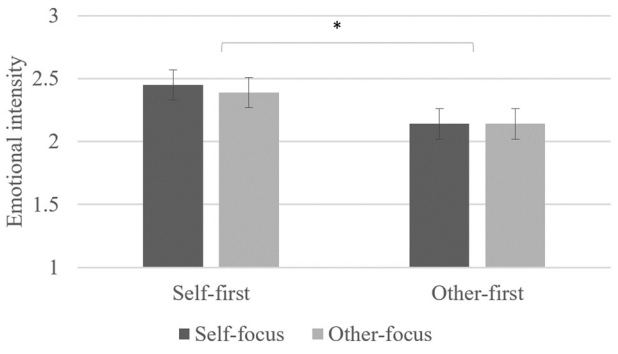

Fig. 2. Means (SEs) of emotional intensity for focus on self vs. other instruction depended on the sequence of reporting on the feelings ($N = 201$). *$p < .05$.

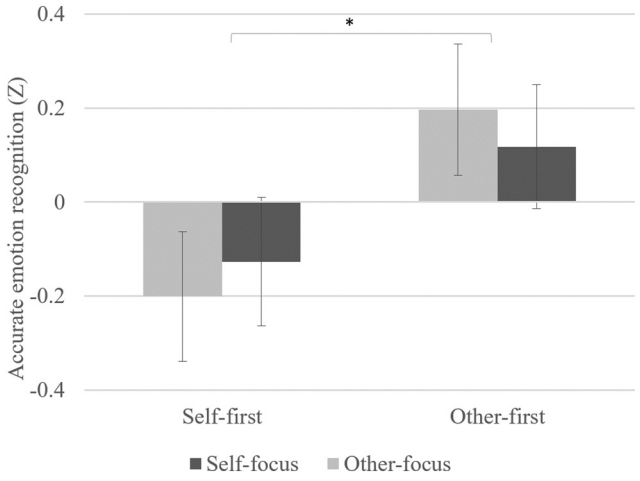

Fig. 3. Means (SEs) of accurate emotion recognition (standardized) for Self- vs. Other-focus, split by the sequence of reporting one's own vs. the other's emotions ($N = 201$). *$p < .05$.

when perceivers' own emotions are made salient - either spontaneously and based on similar past experiences, or experimentally induced by having participants first report on their own emotions - the accuracy of recognizing emotions in others is reduced.

The finding that similarity in experience relates to poorer accuracy, particularly when perceivers are asked to take the other person's perspective (i.e., Other-focus condition), seems to contradict lay beliefs that empathy increases when putting oneself in another's shoes or when having had similar experiences. These preliminary results suggest that in fact, these processes may blind us to the emotions of others. Although we have replicated this pattern of findings in two studies with two different samples and slightly different designs and methods, there is still a possibility that the pattern is caused by specific features of the stories. Thus, to further examine the robustness of the findings, we conducted a third study, using a new set of emotional videos.

7. Study 3

Study 3 was a preregistered replication, in which we aimed to replicate, with a different set of emotional stimuli, the finding that similarity in experience was negatively related to emotion recognition accuracy when the participant tries to focus on the target's perspective. Furthermore, in study 3 we also included a no-instruction control condition to probe the effect of perspective taking instructions (Self-focus, Other-focus) in the context of what happens in daily life, when people receive no instructions at all. This resulted in three perspective taking conditions: Self-focus, Other-focus, and a control condition without instructions. To maximize the statistical power of detecting differences among the three perspective taking instructions, we removed the sequence of emotion rating manipulation used in Study 2.

Thus, Study 3 used the same design as in Study 1, but employed four new videos. As in Study 1, participants watched targets sharing a negative emotional event, and were instructed to rate the target's feelings. Before listening to the emotional stories, participants were asked to either (a) focus on how they would feel if the situation would have happened to themselves (Self-focus), or (b) focus on how the target person in the video felt (Other-focus), or (c) received no instructions (No-focus). We expected to find the same pattern of results obtained in Studies 1 and 2. We predicted that similarity in experience would be associated with less accurate emotion recognition, in particular when participants were instructed to imagine the other's perspective. Given that previous research has found that the Other-focus instruction elicits cognitions and emotions that are identical to those produced in the 'no instruction' condition (e.g. Davis et al., 2004; Wondra & Morelli, 2018), we expected to find the same results in the Other-focus and No-focus conditions. The study, including hypotheses, exclusion criteria, and analysis plan, was preregistered (see https://aspredicted.org/pv96q.pdf).

7.1. Method

7.1.1. Participants

Participants were 223 US citizens (M_{age} = 36, SD_{age} = 11; 60% men), who were recruited via Amazon Mechanical Turk (Mturk). Sixteen participants were excluded from the analyses because they did not meet our preregistered criteria of a) having spent a minimal amount of time (10 min) on the questionnaire, and b) passing at least one of the two questions measuring attentiveness to the instructions of the survey. The remaining sample consisted of 207 US citizens (M_{age} = 36, SD_{age} = 11; 59% men). A sensitivity analysis conducted in G-power suggested that with $\alpha = 0.05$ and 5 predictors the analysis would have a power of 0.80 to detect a small to medium effect ($f^2 = 0.06$). The post-experimental observed power was 1. The description of the study was "*watch people in various videos and rate their emotions*". Each participant received $1.5 in remuneration.

7.1.2. Design and procedure

Our primary aim was to test whether the effect of similarity in experience on accuracy would be robust across different perspective taking instructions and stimuli. Study 3 used the same design as Study 1, with the following changes in measures and stimuli. First, all videos were replaced by new videos. These included a set of new female targets, each sharing an emotional experience from her own life. The topics of the four videos were: (1) experience of a parent being ill, (2) a divorced father in a new relationship, (3) emotional distance from family, and (4) problems with an internship. Immediately after sharing the event, each target then watched her own video and provided ratings of the emotions she felt in the video. The emotion ratings used the same list of ten emotions as in Studies 1 and 2. After each video, participants were asked to report their familiarity with the kind of situation described in the video. Finally, in order to gain insight into people's beliefs about the relationship between similarity in experience and emotional accuracy, we asked them to predict whether people who had had a similar experience in the past would be more accurate, less accurate, or not significantly different in understanding others' emotions.

7.1.3. Measures

We used the same measures as in Study 1: similarity in experience, emotional intensity, and accurate emotion recognition. An additional research question we probed in Study 3 was related to the perceived value of similar experiences in accurate emotion recognition. At the end of the survey,[3] participants predicted which of two groups of people would be more accurate: people who had had a similar experience in the past, or people who had not. Participants predicted emotional accuracy by choosing one of three options: "People will understand other's emotional state *more accurately* when they have had a similar experience in the past (better)" "People will understand other's emotional state *less accurately* when they have had a similar experience in the past (worse)," or "There is no significant difference in understanding between people who have had similar experiences and those who haven't shared similar experiences (ns)."

7.2. Results

7.2.1. Preliminary analyses

7.2.1.1. Similarity in experience. Consistent with the findings in Studies 1 and 2, the three perspective taking conditions did not differ in their baseline levels of similarity with the emotional experiences used in study 3, $F(204) = 1.08$, $p = .34$, $\eta^2 = 0.01$ (Self-focus: M = 2.30, SD = 1.38; Other-focus: M = 2.21, SD = 1.30). The average similarity in experience with the new set of emotional experiences used in Study 3 was 2.88 (SD = 1.47; Cronbach's $\alpha = 0.77$), which was significantly higher than the levels of similarity participants reported with the emotional experiences used in Study 1, $t(412) = 7.16$, $p < .001$, Cohen's d = 0.70, and Study 2, $t(406) = 4.49$, $p < .001$, Cohen's d = 0.45.

7.2.1.2. Emotional intensity. To test the impact of perspective taking instructions on emotional intensity, we conducted a one-way analysis of variance (ANOVA), with Self- vs. Other- vs. No-focus as a between subject factor, and emotional intensity as the dependent variable. The results showed the same pattern as in Study 1, with no difference found between Self- vs. Other-focus, and no difference found with the No-focus condition, $F(2, 204) = 0.25$, $p = .78$, $\eta^2 = 0.00$.

[3] Participants also predicted which of the two perspective taking conditions would be more accurate: people who were asked to focus on the other's perspective, or people who were asked to image oneself in the other's situation. A full description of rating scales and percentages of participants who predicted that accuracy would be higher in each condition can be found in Supplementary materials.

7.2.2. Hypothesis testing

7.2.2.1. Emotion recognition. Initial analyses indicated that individual emotion recognition accuracy varied considerably (with average absolute difference scores ranging from 10 to 37; M = 18.92, SD = 5.19).

Similar to Study 1, we performed a hierarchical linear multiple regression analysis to test whether similarity of experience and Other-focus would lead to more accurate recognition of targets' emotions. We entered similarity in experience, perspective taking instructions, the interactions between Self- vs. Other-focus and similarity in experience as predictors, and accuracy of emotion recognition as the dependent variable. In the first step, we entered into the model Similarity in experience (mean centered), the dummy-coded variables of Perspective taking ($d1$: control = 0, other = 1; $d2$: control = 0, self = 1). In the second step, the interaction components were entered. The significance of all effects was assessed by the bootstrap technique, with 5000 samples (Efron & Tibshirani, 1993), using PROCESS macro (model 1, Hayes, 2013). The model was significant and explained 24% of the variance in accurate emotion recognition, $F(5, 201) = 12.37$, $p < .001$, $R^2_{adj.} = 0.22$). The results of the regression analysis indicated that, as in Study 1, perspective taking instructions had no significant effect on accuracy, Other-focus: $\beta = 0.00$, 95% CI [−0.295, 0.299], $t = 0.01$, $p = .99$; Self-focus: $\beta = 0.11$, 95% CI [−0.193, 0.418], $t = 0.73$, $p = .47$, while similarity in experience was strongly associated with reduced accuracy, $\beta = -0.43$, 95% CI [−0.628, −0.232], $t = -4.27$, $p < .001$. Unlike the findings in Study 1 and 2, however, the interactions between Similarity in experience and Perspective taking were not significant: interaction of similarity with Other-focus: $\beta = 0.07$, 95% CI [−0.252, 0.388], $t = 0.42$, $p = .68$; interaction of similarity with Self-focus: $\beta = -0.01$, 95% CI [−0.414, 0.389], $t = -0.06$, $p = .95$. As in Studies 1 and 2, Similarity in experience was strongly ($\beta = -0.5$) associated with reduced accuracy, but in the current study this pattern occurred across all perspective taking conditions (see Fig. 4 for illustration and statistics).

7.2.2.2. Predicted accuracy. Finally, we examined the percentage of participants who predicted that people who had had a similar experience in the past would be more accurate, less accurate, or not significantly different in understanding others' emotions. Most of the participants predicted that participants would understand others' emotional states more accurately if they have had had a similar experience in the past (76.8%). A small subset believed that participants with a similar past experience would be less accurate (9.7%), and another small group believed that similarity in experience would not significantly affect accuracy (13.5%). This finding demonstrates that most people truly believe that “having been there too” is associated with greater insight into how others feel.

7.3. Discussion

Study 3 replicated the main findings from Studies 1 and 2, namely that having had a similar experience in the past is associated with lower accuracy in recognizing others' emotions, and that taking the perspective of the other person does not help recognizing how that other person feels. We found these effects using a different stimulus set, indicating the robustness of these effects. However, unlike in Studies 1 and 2, we did not find an interaction between perspective taking and similarity in experience, but rather a strong effect size (correlation around - 0.5) of the relation between similarity and accuracy across all three perspective taking conditions.

One possible explanation for the lack of an interaction effect in Study 3 may be related to a general inconsistency in the effects of perspective-taking instructions (see recent meta-analysis, Eyal et al., 2018). This may be due to individual differences in spontaneous perspective taking, which interferes with deliberate perspective taking instructions. Indeed, we asked participants to predict the accuracy of each perspective taking strategy (Other-focus, Self-focus, No-focus) and found that half of the respondents had a preference for a specific perspective taking strategy, irrespective of experimental instructions (see Supplementary materials). The lack of consistent effects for perspective taking in our own and previous studies may thus be due to a possible interaction between participants' own default perspective focus and the instruction assigned to them.

8. Study 4

The aim of Study 4 was to provide more insight into the mechanism underlying the main research findings. In Studies 1–3, we found that having had a similar experience to the one being shared was negatively related to emotion recognition accuracy. Study 4 examined the role of personal distress as driving the observed effect. In previous research, we found that emotional reactions elicited by exposure to another person's plight evokes cognitive processes aimed at understanding another person's thoughts and experiences, as argued in the Affect-to-Cognition Model (ACM; Israelashvili & Karniol, 2018). In particular, the ACM perspective predicts that empathic concern (EC) activates cognitive engagement with the other person, while personal distress (PD) activates cognitive disengagement from the other person. In a recent study using several tests of nonverbal emotion recognition and trait measures of empathy, we found further support of the ACM model. Specifically, individuals who reported higher levels of empathic concern for others, also recognized others' emotions more accurately. Individuals who reported higher levels of personal distress on the other hand, generally showed lower performance in emotion recognition (Israelashvili, Sauter, and Fischer, under review). In line with these findings, we hypothesize that having had a first-hand experience with a negative situation evokes an intense emotional reaction of personal distress that interferes with accurate recognition of emotions.

Study 4 was a preregistered replication and extension of Study 3. We used the same design as in Study 3, but in addition assessed emotional reactions (concern, distress) to the video content. We expected to find the same pattern of results obtained in Studies 1–3. We predicted that similarity in experience would be associated with less accurate emotion recognition. In addition, we predicted that perspective taking instructions would not impact emotion recognition accuracy. Finally, we expected that intense personal distress and empathic concern will mediate the relationship between similarity and accuracy. The study, including hypotheses, exclusion criteria, and analysis plan, was preregistered (see https://aspredicted.org/85fj8.pdf).

8.1. Method

8.1.1. Participants

Participants were 202 US citizens (M_{age} = 36, SD_{age} = 11; 60% men), from a poll of high reputation workers (above 95% of previously approved tasks) recruited via Amazon Mechanical Turk (Mturk). Seventeen participants were excluded from the analyses because they did not meet our preregistered criteria of a) having spent a minimal amount of time (10 min) on the questionnaire, and b) passing at least one of the two questions measuring attentiveness to the instructions of the survey. The remaining sample consisted of 187 US citizens (M_{age} = 38, SD_{age} = 13; 53% men). A sensitivity analysis conducted in G-power suggested that with $\alpha = 0.05$ and 5 predictors, the analysis would have a power of 0.80 to detect a small to medium effect ($f^2 = 0.07$). The post-experimental observed power was 1. The description of the study was “*watch people in various videos and rate their emotions*”. Each participant received $1.5 in remuneration.

8.1.2. Design and procedure

Study 4 used the same design and the same emotional stories as Study 3. Before listening to the emotional stories, participants were asked to either (a) focus on how they would feel if the situation would

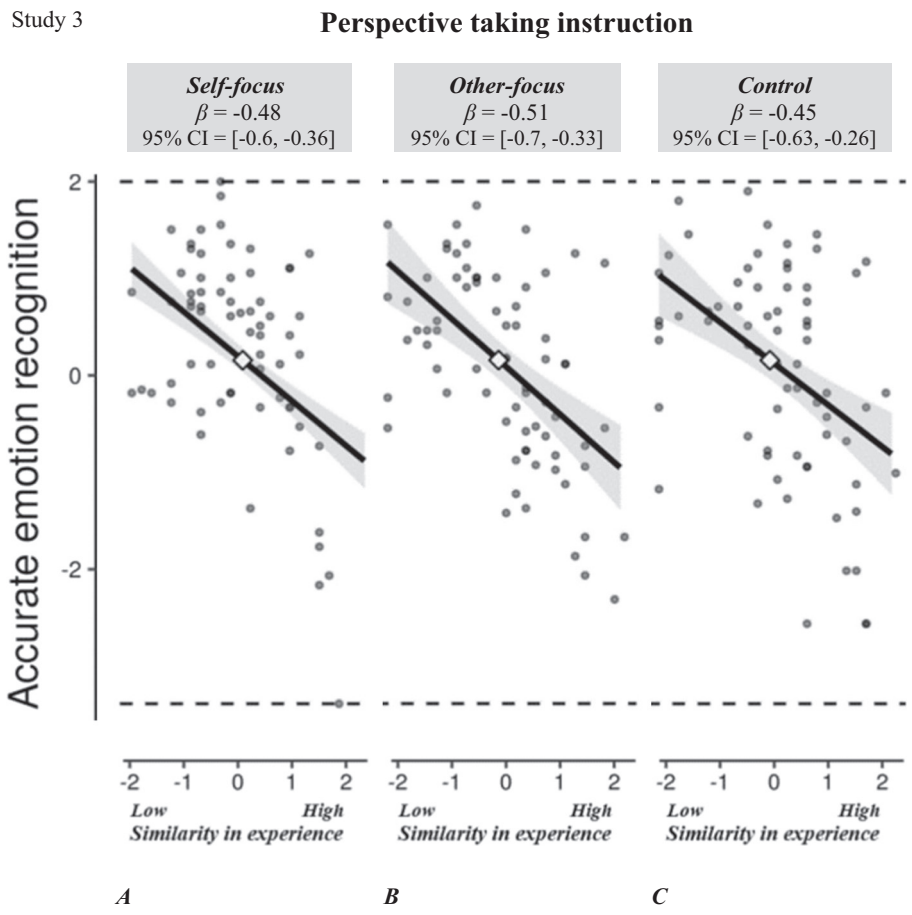

Fig. 4. Accurate (standardized) emotion recognition as a function of similarity in experience (standardized), illustrated for Self-focus (left) and Other-focus (middle) and No-instruction control (right) conditions for Study 3.
Note. Slopes are printed bold when significant ($p < .001$). Accurate emotion recognition assessed by calculating the absolute difference between participants' ratings and the target person's ratings for each one of the ten emotions averaged across all targets, reversed and display standardized accruacy scores. Each graphic shows the computed 95% confidence region (shaded area), the full range of the observed data (gray circles). CI = confidence interval. The illustration was created using interActive software, McCabe, Kim, & King, 2018.

have happened to themselves (Self-focus), or (b) focus on how the target person in the video felt (Other-focus), or (c) received no instructions (No-focus). After watching each video, we asked participants to indicate their emotional reaction (i.e. concern, distress) to the story. Then, participants were asked to rate the feeling of the target, using the same list of emotions as in Studies 1–3. Next, we asked participants whether the kind of situation described in the video had happened to them in the past. Finally,[4] we asked participants to predict whether people who had had a similar experience in the past would be more accurate, less accurate, or not significantly different in understanding others' emotions.

8.1.3. Measures

We used the same measures as in Study 3: similarity in experience, emotional intensity, and accurate emotion recognition. As mentioned above, the additional research question we probed in Study 4 was related to the empathic reaction to the emotional stories depicted in the videos. We measured two facets of affective empathy – empathic concern and personal distress. Specifically, immediately after watching each video participants were asked: "how do you feel in response to this story" and provided their responses by indicating the intensities of several emotions (sympathetic, compassionate, moved, concerned, uneasy, upset, overwhelmed and distressed; 0 – not at all, 6 – very much). An index of (state) concern was calculated by averaging the ratings of feeling sympathetic, compassionate, moved and concerned across all four videos (M = 3.67, SD = 0.38, Cronbach's α = 0.84). An index of (state) distress was calculated by averaging the ratings of feeling uneasy, upset, overwhelmed and distressed across all four videos (M = 2.17, SD = 0.29, Cronbach's α = 0.90). These indices were developed for the current study, aimed to measure affective facets of state empathy. Importantly we found that our measures of concern and distress, as measured at the state level, showed positive correlations with the same constructs, as measured at the trait level using the equivalent indices of the IRI (for concern $r_{state\text{-}trait} = 0.27^{***}$; for distress $r_{state\text{-}trait} = 0.36^{***}$).

[4] In addition we asked participants to a) report which perspective taking strategy they actually used during in the experiment; b) report on the clarity and vividness of each life event they recalled as similar c) choose one (similar) event and describe it in words, d) complete the IRI questionnaire (Davis, 1983). These data were collected for exploratory purposes.

8.2. Results

8.2.1. Preliminary analyses

8.2.1.1. Similarity in experience. The average similarity in experience with the emotional experiences used in Study 4 was 2.80 (SD = 1.46; Cronbach's α = 0.60), which was identical to the average level of similarity participants reported with the same set of emotional experiences as measured in Study 3. The three perspective taking conditions differed in their baseline levels of similarity with the emotional stories, $F(2, 184) = 3.37$, $p = .04$, $\eta^2 = 0.03$. In particular, the level of similarity in experience in the Other-focus condition ($M = 3.16$, $SD = 1.48$) was higher than the level of similarity in the Control condition ($M = 2.48$, $SD = 1.35$; $t(184) = 2.56$, $p = .01$), while all other comparisons were not significantly different from zero (Self-focus vs. Control, Self-focus vs. Other-focus: all t (184) < 1.7, all $p > .30$).

8.2.1.2. Emotional intensity. To test the impact of perspective taking instructions on emotional intensity, we conducted a one-way analysis of variance (ANOVA), with Self vs. Other vs. No focus as a between subject

factor, and emotional intensity as the dependent variable. The results showed the same pattern as in Study 3, with no difference found between Self vs. Other focus, and no difference found with the No-focus condition, $F(2, 184) = 1.41$, $p = .25$, $\eta^2 = 0.01$.

8.2.1.3. Empathic concern and distress. To test the impact of perspective taking instructions on empathic concern and distress, we conducted a multivariate analysis of variance (MANOVA), with Self- vs. Other- vs. No-focus as a between subject factor, and empathic concern and personal distress as dependent variables. The results showed no difference in emotional reaction between these condition, $F(2, 184) = 0.58$, $p = .56$.

8.2.2. Hypothesis testing

8.2.2.1. Emotion recognition. Initial analyses indicated that individual emotion recognition accuracy varied considerably (with average absolute difference scores ranging from 10 to 35; M = 18.43, SD = 5.47).

Similar to Study 3, we performed a hierarchical linear multiple regression analysis to test whether similarity of experience and Other-focus would lead to more accurate recognition of targets' emotions. We entered similarity in experience, perspective taking instructions, the interactions between Self- vs. Other-focus and similarity in experience as predictors, and accuracy of emotion recognition as the dependent variable. In the first step, we entered into the model Similarity in experience (mean centered), the dummy-coded variables of Perspective taking ($d1$: control = 0, other = 1; $d2$: control = 0, self = 1). In the second step, the interaction components were entered. The significance of all effects was assessed by the bootstrap technique, with 5000 samples (Efron & Tibshirani, 1993), using PROCESS macro (model 1, Hayes, 2013). The model was significant and explained 24% of the variance in accurate emotion recognition, $F(5, 181) = 7.37$, $p < .001$, $R^2_{adj.} = 0.24$. The results of the regression analysis indicated that, as in Study 3, perspective taking instructions had no significant effect on accuracy, Other-focus: $\beta = -0.09$, 95% CI [−0.447, 0.273], $t = -0.48$, $p = .63$; Self-focus: $\beta = -0.05$, 95% CI [−0.385, 0.289], $t = -0.28$, $p = .78$, while similarity in experience was associated with reduced accuracy, $\beta = -0.32$, 95% CI [−0.693, −0.282], $t = -4.54$, $p < .001$. Consistent with the findings in Study 3 the interactions between similarity in experience and Perspective taking were not significant: interaction of similarity with Other-focus: $\beta = -0.23$, 95% CI [−0.608, 0.057], $t = -1.63$, $p = .10$; interaction of similarity with Self-focus: $\beta = -0.12$, 95% CI [−0.452, 0.207], $t = -0.73$, $p = .47$. As in Studies 3, Similarity in experience was associated with reduced accuracy across all perspective taking conditions (see Fig. 5 for illustration and statistics).

8.2.2.2. Mediation analysis. Finally, we tested whether the relation between similarity in experience and lower accuracy might be explained by individuals feeling overwhelmed watching the emotional story. To test the significance of the assumed mediation, we ran multiple regression analyses to assess the singular contribution of each component of the model with the bootstrap technique (5000 samples; Efron & Tibshirani, 1993) using JASP 10.2 software (see full statistics in Fig. 6). Overall, similarity in experience was negatively associated with accurate emotion recognition ($\beta = -0.32$, $Z = -7.33$, $p < .001$, 95% CI = −0.410 to −0.237). As expected, the negative relation was partially mediated through increased feeling of personal distress ($\beta = -0.19$, $Z = -5.62$, $p < .001$, 95% CI = −0.261 to −0.126). In addition, a very small yet significant relation between similarity in experience and improved accuracy, was mediated through increased feeling of empathic concern ($\beta = 0.06$, $Z = 2.95$, $p = .003$, 95% CI = 0.019 to 0.096). When controlling for the indirect effects of concern and distress, the direct effect of similarity in experience on reduced accuracy remained significant ($\beta = -0.19$, $Z = -4.60$, $p < .001$, 95% CI = −0.267 to −0.107). These patterns suggest that changes in state empathy, particularly, the activation of personal distress, can partially explain the relation between similarity and accuracy (i.e. partial mediation; see Fig. 6).

8.2.2.3. Predicted accuracy. We examined the percentage of participants who predicted that people who had had a similar experience in the past would be more accurate, less accurate, or not significantly different in understanding others' emotions. The results fully replicated findings in Study 3 - most participants predicted that participants would understand others' emotional states more accurately if they have had had a similar experience in the past (81.4%). A small subset believed that participants with a similar past experience would be less accurate (6.4%), and another small group believed that similarity in experience would not significantly affect accuracy (12.8%). Again, this finding demonstrates that most people truly believe that “having been there too” is associated with greater insight into how others feel.

8.3. Discussion

Study 4 fully replicates the main findings from Studies 1–3. Having had a similar experience in the past is associated with lower accuracy in recognizing others' negative emotions, and the instruction to take the perspective of the other person does not help to recognize how that other person feels. Moreover, Study 4 provides support for the idea that the involvement of empathic concern and personal distress mediate the observed effect. As expected, having had a similar life experience was associated with increased feelings of both concern and distress. These feelings of concern and distress, however, have an opposite effect on accurate emotion recognition. The strongest evidence is found for the idea that higher levels of personal distress are associated with reduced recognition accuracy, but there is also some evidence that more empathic concern is linked to better recognition accuracy. This pattern is consistent with motivational models of empathy (e.g. Israelashvili & Karniol, 2018; Zaki, 2014) and is supported by recent empirical findings from another study (see Israelashvili, Sauter, and Fischer, under review).

9. Meta-analysis

Studies 1–4 used different types of samples, diverse perspective taking instructions and two different sets of stimuli to examine the relation between similarity in experience and accuracy of emotion recognition. To identify the robust effect of similarity in experience on accuracy we conducted a random effect meta-analysis, using JASP 10.2 software. The meta-analysis utilized 10 comparisons of the (standardized) relations between similarity in experience and accurate emotion recognition across all four studies, as calculated and reported in Figs. 1, 4 and 5. The meta-analysis yielded a negative relationship estimated as −0.37, 95% CI [−0.49, −0.26], Z = −6.354, $p < .001$ (see Fig. 7). This finding provides an additional indication that having had a similar negative experience in the past is associated with lower accuracy in recognizing others' negative emotions.

10. General discussion

These four studies show a consistent effect demonstrating that similarity in experience is associated with reduced accuracy of emotion recognition. This main effect of similarity in experience on poorer accuracy goes against lay beliefs as reported in Study 3 and 4. In other words, whereas “I know how you feel, I've been there too” is a common way to express understanding of another's feelings, it may actually not be helpful to “have been there too” in order to better understand how someone else feels. Likewise, our own a priori hypothesis presumed that similarity in experience would allow people to consider more relevant information and that this first-hand familiarity with a similar situation

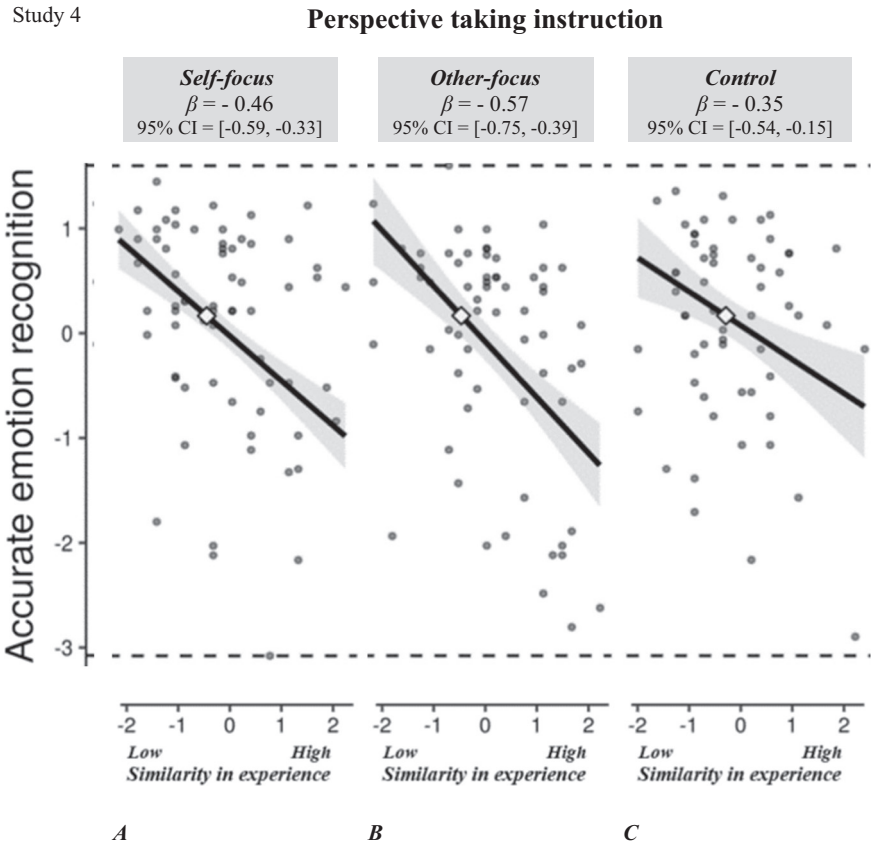

Fig. 5. Accurate (standardized) emotion recognition as a function of similarity in experience (standardized), illustrated for Self-focus (left) and Other-focus (middle) and No-instruction control (right) conditions for Study 4.
Note. Slopes are printed bold when significant ($p < .001$). Accurate emotion recognition assessed by calculating the absolute difference between participants' ratings and the target person's ratings for each one of the ten emotions averaged across all targets, reversed and display standardized accuracy scores. Each graphic shows the computed 95% confidence region (shaded area), the full range of the observed data (gray circles). CI = confidence interval. The illustration was created using interActive software, McCabe, Kim, & King, 2018.

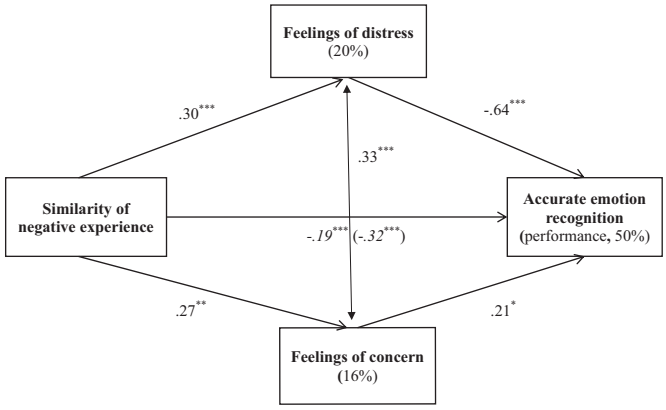

Fig. 6. Standardized parameters of the mediation effect of similarity in negative experience on lower emotion recognition, via increased feelings of distress to other's negative feelings ($N = 187$).
Note. * $p < .05$, ** $p < .01$, *** $p < .001$; % = percentage of explained variance.

would lead to a more accurate understanding of the other's emotional experience. The present results suggest that in fact, this first-hand experience with a negative situation may blind us to the emotions of others. Below, we discuss the theoretical implications of this result, as well as noting some limitations of the current studies.

Past research has consistently found that both similarity in experience and deliberate perspective taking relate to the perceiver's *feelings* of empathy (e.g. Batson et al., 1997; Israelashvili & Karniol, 2017; Perry et al., 2011; Stotland, 1969). However, it was unclear whether these self-reported empathic processes would be associated with differential performance in terms of accurately recognizing others' emotional states. To our knowledge, the current set of studies provide the first evidence that similarity in experience is associated with poorer accuracy in emotion recognition. A similar pattern of reduced accuracy was also found in Study 2 where perceivers' own emotions were made salient by asking participants to first report on their own emotions before they were asked to judge the emotions of the other.

What might explain the inverse negative relationship between similarity in experience and negative emotion recognition accuracy? One explanation, which was supported by Study 4, is that while watching the videos, participants who had a similar (negative) experience in the past (e.g., a cheating partner, a sick parent), were more likely to recall their own stressful experience (Hoffman, 1975; Perry et al., 2011; Schank & Abelson, 1995). Recalling relevant negative experiences can modulate the attention focused on the other person in several ways. First, the negative affect may feel *'too much'* (see Coll et al., 2017) and may evoke personal distress (Davis, 1983; Eisenberg, Shea, Carlo, & Knight, 1991). Felt distress may diverge the attention of the perceiver from the other person and instead focus the attention on the perceiver themselves (Batson & Shaw, 1991; Zaki, 2014). This shift in focus may result in biases in emotion perception (Israelashvili, Sauter, and Fischer, under review; Naor, Shamay-Tsoorym Sheppes, Okon-Singer, 2018). Study 4 directly tested this mechanism and showed that having had similar negative experiences in the past is associated with increased feelings of distress, which in part accounts for the reduced accuracy. The feeling of being overwhelmed might also lead to a general reduction in cognitive resources (Kanske, Trautwein, Lesemann, & Singer, 2016), resulting in difficulties in processing fine-grained emotional information (Erbas et al., 2018).

All that been said, it is worth noting that Study 4 also found that having had a similar life experience was associated with increased feelings of concern, which in turn was linked to better recognition accuracy (see Fig. 6). This fits with the significant positive correlation between trait empathic concern and emotion recognition accuracy we found in Studies 3 and 4 (see Supplemental materials Tables 2 and 3), as

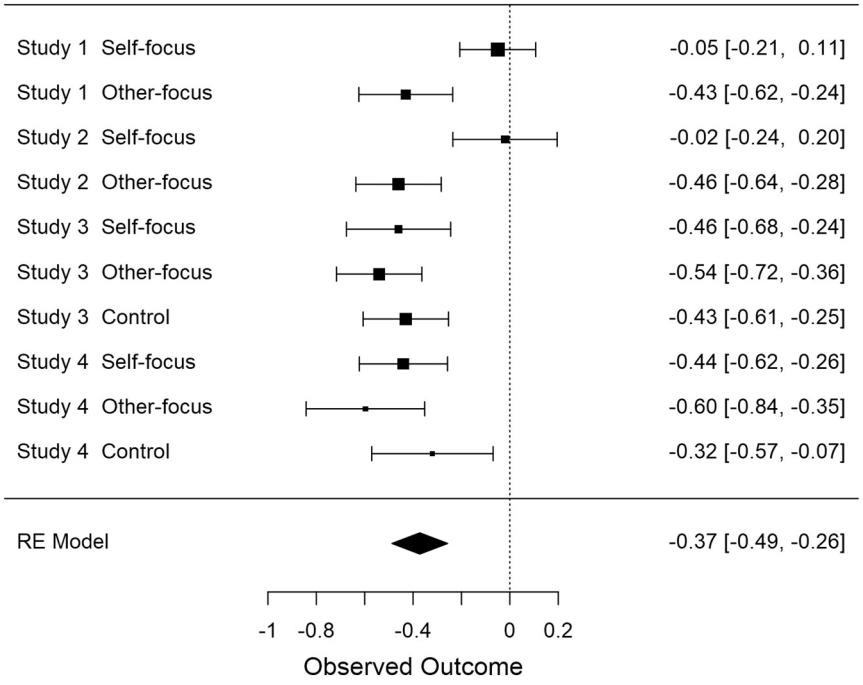

Fig. 7. Forest plot of the effect size of similarity in experience on accuracy estimated using the Random Effects (RE) model. For each study and experimental condition, the size of the box represents the mean effect size estimate, which indicates the weight of that study in the meta-analysis. Numeric values in each row indicate the mean and 95% confidence interval of effect size estimates in bootstrapping analyses (total $N = 803$).

well as another study, in which we found that individuals high in trait empathic concern score higher on standard tests of nonverbal emotion recognition (Israelashvili, Sauter, and Fischer, under review). Taken together, these findings suggest that, to the extent that perceivers can stop themselves from (re-)experiencing distress, similarity in experience can be helpful for recognizing another person's emotions.

Attempts to understand others by 'stepping into their shoes', is commonly considered an essential component of empathy (e.g. Davis, 1983; Preston & de Waal, 2002; Israelashvili, Sauter & Fischer, 2019). Taking another's perspective is typically deemed foundational for understanding others' emotions (e.g., Epley et al., 2004; Erle & Topolinski, 2017). Recent investigations, however, have failed to support the idea that (at least deliberately) taking the other's perspective improves the recognition of non-verbal facial expressions of emotions (Eyal et al., 2018). In line with these investigations, the current studies provide more ecologically valid evidence that taking the perspective of another person does not help perceivers gain an accurate understanding of how they feel, even when verbal information is available. Thus, whereas actively engaging in imagining another's perspective can facilitate an emotional connection with the other (Gilinsky, Ku & Wang, 2005), it does not systematically improve our understanding of how they feel.

We acknowledge some limitations of the current research. First, participants only watched videos of negative feelings shared by women. Further research will be needed to establish to what extent the current results generalize to, for example, stories with different emotional content, positive stories, or stories shared by men. In particular, we wish to emphasize that the present findings are restricted to negative emotions, following previous research on empathy as a response to another's misfortune, and it is unclear whether these findings also hold for positive emotions. We do not expect similar findings, however, because positive emotions are less likely to induce distress. Indeed, Study 4 shows that perceivers who have had a negative life experience similar to the emotional event described in the video indeed felt greater personal distress after watching the video, which in part explained their reduced accuracy. The activation of personal distress may not be relevant for life events associated with positive emotions. A second limitation is that similarity in experience was measured with self-report rather than manipulated. We therefore cannot establish the exact nature of the similarity between targets' and participants' experiences, nor can we establish causality. Third, the current studies relied on previous research that has used and validated the same perspective taking manipulation (e.g. Batson et al., 1997; Davis et al., 2004; Eyal et al., 2018), and thus, we did not include a manipulation check. This means that we cannot be certain that participants followed the instructions they received. Forth, we operationalized accuracy of emotion recognition as a match between participants' and targets' ratings. Obviously, it is possible that the targets themselves were not accurate in assessing their own emotions; accuracy may thus be less objective than the term suggests. On the other hand, the target's own reports of how they felt may be more important than some objective established criteria when operationalizing emotion recognition accuracy.

While acknowledging these limitations, we also want to highlight the advantages of the current methodology: We used highly ecologically valid stimuli with videos in which people shared genuine autobiographical emotional events, and we used an emotion recognition task in which it was possible to report complex patterns of multiple (or no) emotions. This enabled perceivers to report several emotions of varying intensity, which likely resembles emotion perception in real life situations more closely than the selection of a single response option from an array.

To conclude, we examined two routes to empathic understanding: deliberate perspective taking and similarity in shared experience. Deliberate perspective taking did not yield a consistent effect on emotion recognition accuracy, but we consistently found that similarity in experience had an inverse relation to recognition of negative emotions. Whereas previous research has shown that perspective taking and similarity in experience enhances self-reported feelings of empathy (e.g. Hodges et al., 2010), the current findings suggest that this does not translate to enhanced understanding of the other's negative emotional state. In fact, having had a similar experience to the one being shared appears to be negatively related to emotion recognition accuracy. Thus, shared experience and perspective taking can indeed make us feel closer to others, but at the same time might blind us to how they feel.

Open practices

The two last studies in this article, including hypotheses, exclusion criteria, and analysis plans, were preregistered and thus our article

earned a badge for Preregistration. Information can be found at https://aspredicted.org/pv96q.pdf and at https://aspredicted.org/85fj8.pdf.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jesp.2019.103912.

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