

RUNNING HEAD: Empathy building interventions

**Empathy Building Interventions:  
A Review of Existing Work and Suggestions for Future Directions**

Erika Weisz and Jamil Zaki

Stanford University

FORTHCOMING in Doty, J. & Seppala, E., Simon-Thomas, E., Cameron, D., Brown, S.,  
& Worline, M. (Ed): Oxford Handbook of Compassion Science. Oxford University Press

Address correspondence to:

Jamil Zaki  
Department of Psychology  
Stanford University  
Stanford, CA 94305  
[jzaki@stanford.edu](mailto:jzaki@stanford.edu)

Word count: 4, 089

Abstract word count: 131

ABSTRACT

A major question in the study of *empathy*—the capacity to share and understand others’ internal states—is whether it can be increased. Scientists have designed a number of effective interventions through which to build empathy, especially in cases where it typically wanes. Here we review these efforts, which often focus on either enhancing individuals’ skills in *experiencing* empathy or *expressing* empathy to others. We then propose a novel approach to intervention based on a motivated account of empathy: teaching people not only how to empathize, but also encouraging them to *want* to empathize. Research traditions from social psychology offer several ways of increasing empathic motivation, which can complement existing work and broaden the palette of applied scientists seeking to help people develop their capacities to care for and understand others.

More than any other species on earth, humans vicariously experience others' thoughts and feelings. *Empathy*—the capacity for one person (a perceiver) to share and understand internal states of someone else (a target)—is a social bridge that allows us to connect with one another. It also drives many crucial downstream outcomes, including individual well-being (Davis, 1983; Mehrabian, 1996; Wei, Liao, Ku, & Shaffer, 2011) and prosocial behavior (Batson & Shaw, 1991).

Yet for all its benefits, empathy is not a universal response; it predictably fails under certain conditions (Zaki & Cikara, 2015). For instance, people experience reductions or even reversals in empathy during conflict (Brewer, 1999; Hein, Silani, Preuschoff, Batson, & Singer, 2010; Sherif, 1936) and when interacting with dissimilar others (Chiao & Mathur, 2010; Mitchell, Macrae, & Banaji, 2006; Singer, Seymour, & O'Doherty, 2006; Xu, Zuo, Wang, & Han, 2009). In other cases, an individual's experience or even their profession reliably diminishes empathy. For instance, doctors sometimes fail to correctly understand the depth of their patients' suffering (Decety, Yang, & Cheng, 2010; Marquié et al., 2003), diminishing well being in both patients (Hojat et al., 2011) and physicians (Krasner et al., 2009). Sources of empathic failure can compound each other. For instance, empathy impairments among medical professionals are exacerbated when interacting with Black patients (Goyal, Kuppermann, Cleary, Teach, & Chamberlain, 2015; Trawalter, Hoffman, & Waytz, 2012). These empathy failures and their devastating consequences generate an important question: is it possible to build empathy through intervention? To answer this question, we must first consider the nature of empathy. Is empathy a fixed capacity, or is it a skill that can be developed over time?

Individual differences in empathic tendencies register on a number of indices suggesting that empathy may be a stable trait. First, people differ in reports of how much empathy they feel for a target (Davis, 1983; Eisenberg & Miller, 1987; Mehrabian, Young, & Sato, 1988). They also differ in their tendencies to convey empathy in facial expressions (Lundqvist & Dimberg, 1995; Sonny-Borgström, Jönsson, & Svensson, 2003), in their empathy-related brain activity, (Hooker, Verosky, Germine, Knight, & D'Esposito, 2010; Marsh et al., 2008; Singer et al., 2006) and in their capacities to offer help when confronted with others' distress (Davis et al., 1999; Hein et al., 2010).

Other evidence challenges this notion, demonstrating that empathy is highly sensitive to situational forces. For example, though some studies find that women are more empathic than men, a closer examination shows that this difference only manifests under certain contextual constraints (like when empathy-relevant gender expectations are made salient) (Ickes, Gesn, & Graham, 2000). Clever manipulations of situational features reduce these differences (Klein & Hodges, 2001; Thomas & Maio, 2008), supporting the idea that empathy is susceptible to change across contexts. In many cases, individual differences are only weak indicators of empathy and related behavior. Sometimes situational factors (e.g., limited time) change the likelihood that someone will empathize (Shaw, Batson, & Todd, 1994) and predict helping behavior better than trait indices of empathy (Darley & Batson, 1973).

These findings align with a malleable view of empathy; though there is evidence for variability in individuals' trait empathy, inconsistent responding across situations suggests that empathy can be developed. In an effort to further investigate the flexibility of empathy, researchers have endeavored to change it through intervention.

*Empathy and Compassion.* Empathy encompasses at least three related but distinct subprocesses. *Mentalizing* refers to the ability to draw inferences about a target's thoughts and feelings (Davis, 1983). *Experience sharing* refers to the process by which someone vicariously experiences another person's emotional state (Hatfield, Cacioppo, & Rapson, 1993). Finally, *empathic concern* captures a perceiver's desire to alleviate a target's distress (Batson, 2008). Though behaviorally and physiologically dissociable, the three subcomponents are deeply intertwined and interactive (Zaki & Ochsner, 2012). For example, exercises in perspective taking can elicit increases in empathic concern (Batson et al., 1997; Batson, Turk, Shaw, & Klein, 1995).

Compassion, on the other hand, is the capacity to perceive and desire to alleviate others' suffering (Goetz, Keltner, & Simon-Thomas, 2010). Features of empathy (particularly the empathic concern subprocess) bear great resemblance to compassion; both feature an understanding of another person's emotional states coupled with a desire to help. However, though they likely share evolutionary roots, empathy and compassion are conceptually distinct constructs (Zaki, 2014). Compassion entails recognizing specific *negative* emotional states (like pain) and subsequently experiencing an urge to help; empathy involves sharing and understanding a range of emotions, both positive and negative. Empathy also involves both an understanding and a sharing of someone else's feelings, whereas compassion may not require a perceiver to vicariously share another person's feelings. Later in this chapter, we offer a framework of motivated empathy intended to complement existing empathy interventions. Though here we address interventions specifically designed at bolstering empathy, it should be noted that our

motive-based framework could be similarly applied to compassion-related interventions because both involve engagement with others' emotions (Zaki, 2014).

Given the interplay of mentalizing, experience sharing, and empathic concern (and because there are relatively few empathy training studies), in this chapter we will review interventions aimed at increasing any of these three empathic subcomponents. We will start by reviewing empathy-building efforts, then suggest a novel framework for constructing empathy interventions. Crucially, we will differentiate two categories of interventions; first we'll review existing interventions, which typically aim to bolster people's empathic *ability*. We'll then explore a novel, theory-driven approach for instead building people's *motivation* to empathize, and describe applications of motive-based empathy interventions.

### **A Review of Existing Interventions**

Many empathy interventions focus on developing people's *ability* to empathize by targeting their capacity to experience empathy or expressing empathy to others.

*Experienced-based interventions* feature tasks that encourage "tuning in" to targets' internal states. *Expression-based interventions* help perceivers more effectively convey empathy for a target.

Experience based interventions often offer perceivers an opportunity to take a target's perspective, either through imagining themselves in the target's position or considering a target's internal states. These two approaches build empathy for targets by providing a deeper understanding of their thoughts and feelings. Some interventions use role-play techniques to build empathy through simulating a target's experience. Allowing

perceivers to see the world through the target's perspective facilitates better understanding of their internal states, in turn cultivating empathy for them. In one such project, medical students were admitted to stay overnight in a hospital to experience hospitalization from a patient's perspective. The students who participated expressed greater interest in improving the doctor-patient relationships, suggesting that this role-play exercise worked in evoking sympathy for patients (Wilkes, Milgrom, & Hoffman, 2002).

Bunn and Terpstra (2009) used a novel experiential technique for medical students during their psychiatry rotation. Students underwent an auditory hallucination simulation while completing a battery of cognitive tasks in an effort to understand patients' experiences during neuropsychological testing. Participating students later had higher scores on a self-report measure of empathy for individuals with mental illness (Bunn & Terpstra, 2009). Similar methods have been used to increase empathy among adolescents for their peers (Jacobs, 1977), among sex offenders for assault victims (Webster, Bowers, Mann, Marshall, 2005), and among college students for the disabled (Clare & Jeffery, 1972), (see **Table 1** for a summary of existing empathy building interventions).

Other perspective-taking techniques explicitly instruct perceivers to consider a target's internal states. In one study, perceivers were asked to imagine the life and feelings of a target who was a member of a stigmatized group. This intervention increased positive evaluations both for the stigmatized targets and for other members of the stigmatized group (Batson et al., 1997). In a study using a similar paradigm, imagining the thoughts and feelings of a heroin addict led participants to allocate more

money toward an addiction treatment agency, suggesting that these interventions also elicit positive downstream effects of helping behavior (Batson, Chang, Orr, & Rowland, 2002).

Researchers also use vignettes, videos, stories, and letters to deliver similar information about targets' perspectives. These techniques are often used to promote empathy for outgroup members. One study found that white students who watched a video documenting white privilege and institutional racism showed an increase in empathy and racial awareness (Soble, Spanierman, & Liao, 2011). In another study, Arab participants read and responded to a letter written by a Jewish mother whose son had been killed in a terrorist attack. Participants experienced more empathy and less hostility towards Israelis after the letter writing activity (Shechtman & Tanus, 2006). Similar effects emerge following firsthand contact between groups. Intergroup contact diminishes prejudice and hostility (Pettigrew & Tropp, 2006) by increasing perspective taking and empathy toward outgroup members (Pettigrew & Tropp, 2008).

Some interventions designed to foster compassion or empathic concern use techniques like meditation to increase understanding of and caring for others. Such "compassion training" has induced changes in psychological (Jazaieri et al., 2015), physiological (Klimecki, Leiberg, Lamm, & Singer, 2013; Weng, Fox, Shackman, & Stodola, 2013), and behavioral (Condon, Desbordes, Miller, & DeSteno, 2013; Leiberg, Klimecki, & Singer, 2011) responses to others' distress. Through role-play, media presentations, first-hand contact, and compassion meditation, experiential interventions build empathy by giving perceivers a deeper understanding of targets' experiences.



Expression-based interventions teach participants to recognize targets' internal states and respond appropriately. They are often implemented in cases where a perceiver fails to identify others' distress, or when a perceiver is impaired in conveying empathy for a target. Expression interventions are often used among medical professionals, often enhancing doctors' empathic displays. Empathic displays (e.g., wincing at others' pain) serve communicative purposes, informing a target that the perceiver understands and shares their suffering (Bavelas, Black, Lemery, & Mullett, 1986). Given that the doctor-patient relationship is a context where showing empathy can improve relations, communication skills training programs are popular techniques among this population<sup>1</sup> (Back et al., 2007; Bonvicini et al., 2009).<sup>1</sup>

Riess and colleagues recently developed a program specifically for physicians that featured a scientific justification for being empathic with patients. In their paradigm, physicians watched videos of difficult interactions between doctors and patients. The videos displayed the doctor and patient's physiological responses (e.g., skin conductance fluctuations) on a portion of the screen during the conversation, providing information about the ameliorative effects of sharing affect with patients. Consistent with the researchers' expectations, the training improved doctors' recognition of facial expressions and their evaluation scores on a patient satisfaction measure (Riess, Kelley, Bailey, Dunn, & Phillips, 2012).

In order to convey an empathic response, a perceiver must first recognize a target's distress. Therefore, some expression-based interventions focus on enhancing a

---

<sup>1</sup> It's possible that developing empathy expression simultaneously changes people's experience of empathy. In one intervention, nurses trained in empathic responding (e.g., listening and adding to a patient's statement) later reported feeling greater empathy for their patients (Herbek & Yammarino, 1990). Consistent with literature on power embodiment (Carney, Cuddy, & Yap, 2010), perhaps adopting an empathic disposition changes people's expression of empathy and their internal experience of empathy.

perceiver's emotion recognition ability. Such training techniques are often used among people who exhibit impaired empathic responding due to impaired ability to read others' communicative gestures. People with autism, for example, struggle to understand others' expressions and mental states. Through systematic training in expression identification, individuals with autism can improve their emotion recognition abilities (e.g., Golan & Baron-Cohen, 2006). A similar emotion recognition paradigm was implemented among aggressive adolescents. Adolescents with higher levels of callous/unemotional traits benefitted most from this emotion recognition training, and displayed significant improvements in affective empathy following the intervention (Dadds, Cauchi, Wimalaweera, Hawes, & Brennan, 2012).

*Summary.* Existing empathy interventions can be broadly categorized as enhancing the experience or expression of empathy. Using a variety of techniques including role-play, perspective taking and information sharing, *experiential interventions* increase one's internal feeling of empathy. *Expression interventions*, on the other hand, change a person's external display of empathy by teaching perceivers to recognize and respond to targets' distress. It should be noted that this characterization of existing work serves only to better categorize the most popular methods of existing studies; this is not an exhaustive review of all related work and therefore this categorization functions only to orient the reader to important features of previous interventions.

### Accounting for Empathic Motives

Existing interventions are effective in changing empathy; a recent review suggests that interventions can alter people's capacity to feel empathy, their ability to show empathy, and even elicit downstream effects of empathy like altruistic helping behavior (van Berkhout & Malouff, 2015). Given their utility, one may wonder whether these interventions would be effective if applied to novel situations. The answer is probably “yes”, but only under specific conditions. These interventions will likely work in situations where perceivers are *able* to empathize (they can recognize others' emotions and have the means to respond accordingly) and are *ready* to empathize (there are no factors discouraging empathy for the target). But is this the case across all perceiver-target relationships? Unfortunately it is not; people frequently fail to empathize with particular targets not because they are *unable* to do so, but rather because they are *unwilling* to empathize (Zaki, 2014; Zaki & Cikara, in press).

In particular, empathy—like many other psychological phenomena (Dweck & Leggett, 1988; Kahneman & Tversky, 1979; Kunda, 1990; Lewin, 1952)—reflects the interplay of *approach motives*, which drive people toward empathizing, and *avoidance motives*, which drive people away from empathizing. Avoidance motives include cases in which people expect empathy to be costly (Cameron & Payne, 2011; Pancer, McMullen, Kabatoff, Johnson, & Pond, 1979; Shaw et al., 1994) or painful (Davis et al., 1999). People also experience empathic avoidance motives when empathy conflicts with their goals, for instance during competition. To wit, a linebacker who feels the pain of the person he tackles would likely be worse at his job. Evidence suggests that people in such contexts avoid empathy, including under darker contexts, such as executioners

downplaying or ignoring the suffering of death row inmates (Osofsky, Bandura, & Zimbardo, 2005)

Empathy-inducing techniques like perspective taking can even backfire when applied in particular contexts. In competitive interactions, for example, perspective-taking manipulations increase the likelihood that one will behave selfishly (Epley, Caruso, & Bazerman, 2006). Perceiving distress in competitive interactions often elicits counterempathic emotions like *schadenfreude* (Cikara & Fiske, 2011; Lanzetta & Englis, 1989; Yamada, Lamm, & Decety, 2011). Considering the mind of another person may be a “relational amplifier”, facilitating prosocial interactions in cooperative contexts but dishonesty or deceitfulness in competitive contexts (Pierce, Kilduff, Galinsky, & Sivanathan, 2013). Such empathic failures don't result from a lack of *ability* to empathize, but rather they reflect a lack of *motivation* to empathize. Such empathic failures are often the most pernicious (e.g., bullying, intergroup conflict) and are arguably the cases in which empathy is needed most.

What does this mean for existing interventions? Despite their success, effects of existing interventions may be unnecessarily constrained due to an incomplete depiction of forces impacting empathy. These studies and their findings imply a direct link between perceiving distress and responding empathically; empathy is “triggered” when a perceiver is able to detect someone else's pain. But this theory doesn't account for the many cases where empathy breaks down for motivational reasons. An intervention that changes experience or expression of empathy while simultaneously accounting for empathic motives could be even more effective than changing experience and expression alone. By pairing existing techniques with complementary motive-based approaches, we are

positioned to expand our scope of influence and correct multiple varieties of “empathy gaps” including both ability-based and motive-based failures.

### **Social Psychology and Brief Interventions**

Social psychology offers a theoretical foundation for developing motive-based empathy interventions. With an acute understanding of the system of forces governing certain actions, small motive adjustments can elicit big behavioral changes (Yeager & Walton, 2011).

Brief social psychological interventions derive their success from disrupting cycles of behavior at crucial points. Consider an intervention designed to improve achievement in school; Teaching students that poor performance reflects a lack of effort (not a lack of ability) may encourage them to exert more effort on subsequent tasks, which in turn produces improvements in performance (Dweck & Leggett, 1988).

Assuming that people act under the influence of interacting forces, strategically tweaking elements of these systems of motives produces enduring behavioral changes (Lewin, 1943). Brief interventions influence a person’s behavior over time, changing an individual and in turn changing their environment (Walton, 2014).

Social psychological interventions could be adapted to build empathy in at least three ways: by changing views of the self, by changing perceived social norms, and by shifting people’s construal of particular empathy-evoking situations. Through targeting the motives that bear on empathy, interventionists may be able to preserve empathy in contexts where it is known to fail<sup>2</sup>.

---

<sup>2</sup> In this section, we organize social psychological interventions into three categories: Self-Oriented Interventions, Group-Based Interventions, and Situation-Based

*Self-Oriented Interventions.* Work by Carol Dweck and colleagues illustrates the degree to which our beliefs influence our behavior. Dweck differentiated two types of *mindsets*, or beliefs about the nature of a phenomenon, which predict people's behavior in challenging contexts. Individuals with *fixed mindsets* of intelligence believe that intelligence is a stable quantity that does not change, whereas individuals with *growth mindsets* of intelligence believe that intelligence can be developed with effort (Dweck & Leggett, 1988).

These *implicit theories* about the nature of psychological phenomena extend beyond the domain of intelligence, and have implications for other areas of social cognition including beliefs about personality and interpersonal functioning (Chiu & Dweck, 1997; Erdley, Cain, Loomis, Dumas-Hines, & Dweck, 1997). Interventions targeting beliefs about psychological phenomena have been tremendously effective in improving people's academic performance (Blackwell, Trzesniewski, & Dweck, 2007), their resilience to academic failure (Wilson & Linville, 1982) and their behavior following social rejection (Yeager et al., 2011).

Drawing from these motive-based interventions, subsequent work has targeted people's lay theories of empathy to shape motives and behavior. In a 2014 study, Schumann and colleagues found growth mindsets of empathy (whether measured across people or induced experimentally) predicted greater empathic effort in challenging situations (e.g., when interacting with a target from a social outgroup). Interventions

---

Interventions. This taxonomy is used to highlight similarities and differences between existing social psychological interventions and the motives they alter. However, many social psychological interventions may stretch across these categories and could appeal to multiple motives simultaneously. This categorization should therefore be regarded as an organizational heuristic, not an exhaustive characterization of all motives addressed by these interventions.

seeking to improve empathic effort—especially in contexts when empathy can break down—could approach behavior change by targeting beliefs about empathy’s malleability (Schumann, Zaki, & Dweck, 2014).

Lay theories also predict people’s resilience in the face of failure. Returning to the example of intelligence, individuals with growth mindsets of intelligence are more likely to attribute failure to a *lack of effort*. They’re often motivated to persevere after failure, applying greater effort and in turn developing intelligence. People with fixed mindsets of intelligence attribute failure to a *lack of ability*. Fixed mindsets of intelligence steer people away from contexts in which they expect to fail, since failure jeopardizes views of their own intelligence (Elliott & Dweck, 1988; Hong, Dweck, Lin, & Wan, 1999).

Mindsets could similarly influence attributions of empathic failures. When people fail to empathize, they may conclude that they are unable to empathize or that they are not empathic people. Instead, teaching people that empathy failures can be overcome with increased effort (i.e., inducing a growth mindset of empathy) could make them resilient to empathic failures and encourage them to exert more effort empathizing in these contexts.

Interventions designed to teach people that empathy is malleable and can be developed can build their motivation to empathize, change their interpretation of empathic failure, and ultimately increase their willingness to connect to others even when it is challenging.

*Group-Based Interventions.* Group dynamics shape empathic behavior. Ingroup members are often favored over outgroup members, a phenomenon referred to as *intergroup bias* (Brewer, 1979; Tajfel, 1982). This propensity carries over to empathic

behavior, and people generally show blunted affective responses to people from an outgroup (Cikara, Bruneau, & Saxe, 2011). Intervention techniques that change perceptions of group boundaries may be useful in reducing group-based empathy biases. The Common Group Identity Model (Gaertner & Dovidio, 1977) suggests that the boundaries defining groups are flexible; extending a conception of an ingroup to be more inclusive (e.g., Americans instead of New Yorkers) reduces intergroup tension.

Applications of this model highlight its potential to change intergroup relations. In a 2005 study of helping behavior, Levine and colleagues examined the malleability of ingroup preference by changing people's perceptions of group boundaries. When cues of ingroup membership were narrow (based on shared support of one particular soccer team), participants were less likely to help a person wearing another team's jersey (an outgroup member). But by changing cues of ingroup membership to be more inclusive (defining ingroup membership as soccer fans rather than Manchester United fans), the group-based difference is attenuated and help is offered to those who were previously regarded as outgroup members (Levine, Prosser, Evans, & Reicher, 2005).

Similarly, altering intergroup interactions can change perceptions of group boundaries and reduce intergroup bias. Introducing shared goals to groups in conflict reduces tension and increases positive intergroup interactions (Sherif, 1958). Subsequent studies have also "overridden" existing group boundaries by offering salient cues of alternative group membership. Biased processing of racial outgroup members' faces, for example, is reduced by the introduction of shared group membership in a minimal groups paradigm (van Bavel, Packer, & Cunningham, 2008). If group-based behavior is determined by ingroup boundaries, and such boundaries are flexible, then scientists may



elicit motivational and behavioral changes in empathy by broadening people's views of ingroup membership.

In addition to changing the structure of a group to encourage empathy, changing a group's values could similarly alter empathic behavior. A long tradition of research demonstrates that people willingly adjust their beliefs and behavior to match others around them (Asch, 1956; Sherif, 1936). This effect is amplified in group contexts; to preserve a sense of group membership and belongingness, people even endorse beliefs that they *think* their ingroup holds (Prentice & Miller, 1993). Under the scrutiny of their ingroup, people may be motivated to avoid empathy for outgroup members if it means deviating from the perceived group norms.

Norms convey powerful messages about how group members typically think and behave (Cialdini, 2003; Sherif, 1936). People are sensitive to these messages and often act in ways consistent with apparent norms (Cialdini, Reno, & Kallgren, 1990). Given that group norms are so closely linked to group membership, shifting norms could be a useful avenue for changing individual members' attitudes and values.

In instances of empathic failures resulting from intergroup tension, it may be especially important to understand the existing group norms, how they are perpetuated, and how they can be modified. Introducing norms at initial stages of group formation may be particularly fruitful. For example, if one wanted to increase empathy on a college campus, it would be wise to take new members (i.e., college freshman) and teach them that they are entering an environment where empathy is valued and regularly practiced in the community (Nook, Ong, Morelli, Mitchell, & Zaki, under review; Tarrant, Dazeley, & Cottom, 2009).

Beliefs about the nature of groups and the people that comprise them have tremendous implications for an individual's behavior. Changing a group's structure (by altering group boundaries) or shifting a group's values (by adjusting salient norms) can produce long-term changes in people's social functioning and empathic behavior.

*Situation-Based Interventions.* A third approach to intervention is changing people's perception of empathy-inducing *situations*. Just as perceiver and target's individual attributes shape empathy, characteristics of the contexts in which dyadic interactions occur are also deeply influential. Interventions should be sensitive to cues embedded in situations, and could work to adjust situational signals to promote empathy. This could be achieved by shaping situations to feature cues illustrating the goal-relevance of empathy, perhaps highlighting how empathy (1) can help people feel good and (2) can help people satisfy the demands of their important social roles.

Emphasizing the personal benefits of empathy could encourage empathic engagement. Empathy changes as a function of people's beliefs, and it often breaks down when a perceiver expects it to be painful or impose a monetary cost. Fortunately, these beliefs are amenable to change and adjusting people's perspective on the costs of empathy changes empathic behavior. In one study, informing participants that prosocial helping imposed only a low cost (i.e., helping the target would not be time-consuming) made them more likely to empathize with a person in need (Shaw et al., 1994).

Addressing people's concerns about the affective costs of empathy (i.e., whether they'll feel badly after empathizing) could produce a similar outcome. When people expect that empathy will be painful (imposing an "emotional cost"), they are more likely to avoid it (M H Davis et al., 1999). By shaping people's expectations about the

emotional outcomes of empathy, we may be able to encourage them to empathize even when they expect it to be painful.

Interventions could similarly highlight the affective benefits of empathy. Predictions of affective outcomes (like vicariously feeling another person's happiness) powerfully influence behavior and can be harnessed for prosocial purposes; in one study, people's expectations of positive emotions conferred by volunteering predicted their subsequent volunteering behavior (Barraza, 2011). One could similarly emphasize the benefits of empathy (like its positive influence on psychological and physical health) in creating an intervention to increase empathic engagement.

Finally, people may be more likely to empathize when they see its *goal relevance*. By showing people how empathy may facilitate their existing goals (for example, fulfilling the duties of their important roles) empathizing becomes personally significant to them. Previous interventions have modified situations to signal task significance to increase certain behavior. In an intervention looking at the influence of task significance on performance, lifeguards who read stories about other lifeguards rescuing swimmers volunteered to work more hours and were rated as more helpful by guests than lifeguards who read stories about how they could personally gain skills or knowledge from the job (Grant, 2008). In a similar study, doctors washed their hands more when reminded of the benefits hand-hygiene had for their patients (Grant & Hofmann, 2011)

In professions like these where one's identity is derived from relational connections to others people, highlighting the role-relevant aspects of a novel action encouraged participants to change their behavior. Tailoring experimental messages to emphasize aspects of the behavior that were consistent with the lifeguards' and doctors'

identities produced more robust behavior change than emphasizing the personal benefits of the same behavior.

When empathy is relevant to one's important roles and aspects of one's identity, it may manifest more readily than it otherwise would have. For example, when gender value cues are made salient women outperform men on tests of empathic accuracy. When the task was presented as relevant to their role as a female, the researchers suspected, women were more motivated to do well on the task and outperformed men in an effort to behave consistently in their roles as women (Klein & Hodges, 2001). Interventions that connect empathy to meaningful aspects of a person's identity (like occupational or social roles) stand to produce enduring effects on a person's empathic motivation.

### Limitations

Despite the promise of this model for building empathy, there are limitations of a motive-based approach (and of empathy interventions more generally). Motive-based interventions will likely fail in contexts where competing avoidance motives overpower approach motives. There are many situations in which an individual has the *ability* to empathize, but lacks the *desire* to empathize (e.g., when empathy is expected to be painful or costly, or during competitive or hostile interactions). In the face of these powerful motives to avoid empathy, interventions designed to bolster approach-motives are likely to fail (Prentice & Miller, 2010). In constructing a motive-based empathy intervention, it is therefore crucial to consider the entire range of motives influencing a perceiver-target. A wise researcher may recognize, for example, that a small reduction in avoidance motives could yield greater outcomes than a large increase in approach motives.

Furthermore, it's important to consider contexts in which *any* attempt to develop empathy (motive-based or otherwise) could potentially do more harm than good. Several studies explore the counterintuitive antisocial effects of perspective taking (for a review and theoretical exploration, see (Vorauer, 2013). In some cases, perspective taking can aggravate existing tensions between perceivers and targets (Paluck, 2007), or increase the likelihood that a perceiver will seek to harm a target (Okimoto & Wenzel, 2011). Of course, perspective taking and subsequent behavior are influenced by context. For example, a study finding that perspective taking increased negative attitudes toward an outgroup emphasized that this was a feature of a power imbalance between the two groups (Bruneau & Saxe, 2012). Given that the effects of perspective taking are highly

sensitive to perceiver-target dynamics and the larger context, it's important for researchers to consider these factors in constructing interventions.

### **Conclusion**

Psychologists have generated a number of interventions that successfully build empathy. In addition to their promise in addressing empathic “failures,” these interventions highlight the malleability of empathy overall. The lion’s share of existing interventions focus on building empathic skills through exposing people to empathy-inducing cues, teaching them to take others’ perspective, or to better express empathy. Although these approaches have been successful, interventions could also benefit from adopting a complementary, motive-based approach that targets the underlying forces governing empathy. By altering empathic motives through changing perceptions of the self, views of a group, or interpretation of situational cues, new types of interventions stand to make even more impactful change on people’s ability and tendency to consider, share, and care about each others’ experiences.

## REFERENCES

- Asch, S. E. (1956). Studies of independence and conformity: A minority of one against a unanimous majority. *Psychological Monographs: General and Applied*, 70(9), 1–70.
- Back, A. L., Arnold, R. M., Baile, W. F., Fryer-Edwards, K. a, Alexander, S. C., Barley, G. E., ... Tulskey, J. a. (2007). Efficacy of communication skills training for giving bad news and discussing transitions to palliative care. *Archives of Internal Medicine*, 167(5), 453–460. doi:10.1001/archinte.167.5.453
- Barraza, J. a. (2011). Positive emotional expectations predict volunteer outcomes for new volunteers. *Motivation and Emotion*, 35(2), 211–219. doi:10.1007/s11031-011-9210-4
- Batson, C. D. (2008). Empathy-Induced Altruistic Motivation. *Herzlyia Symposium on Personality and Social Psychology*, 1–32. doi:http://dx.doi.org/10.1037/12061-001
- Batson, C. D., Chang, J., Orr, R., & Rowland, J. (2002). Empathy, Attitudes, and Action: Can Feeling for a Member of a Stigmatized Group Motivate One to Help the Group? *Personality and Social Psychology Bulletin*, 28(12), 1656–1666. doi:10.1177/014616702237647
- Batson, C. D., Polycarpou, M. P., Harmon-Jones, E., Imhoff, H. J., Mitchener, E. C., Bednar, L. L., ... Highberger, L. (1997). Empathy and attitudes: can feeling for a member of a stigmatized group improve feelings toward the group? *Journal of Personality and Social Psychology*, 72(1), 105–118. doi:10.1037/0022-3514.72.1.105
- Batson, C. D., & Shaw, L. L. (1991). Evidence for Altruism: Toward a Pluralism of Prosocial Motives. *Psychological Inquiry*, 2(2), 107–122. doi:10.1207/s15327965pli0202\_1
- Batson, C. D., Turk, C. L., Shaw, L. L., & Klein, T. R. (1995). Information Function of Empathic Emotion : Learning That We Value the Other ' s Welfare, 68(2), 300–313.
- Bavel, J. J. Van, Packer, D. J., & Cunningham, W. A. (2008). The Neural Substrates of In-Group Bias, 19(11), 1131–1139.
- Bavelas, J. B., Black, A., Lemery, C. R., & Mullett, J. (1986). “I show how you feel”: Motor mimicry as a communicative act. *Journal of Personality and Social Psychology*. doi:10.1037/0022-3514.50.2.322
- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, 78(1), 246–263. doi:10.1111/j.1467-8624.2007.00995.x
- Bonvicini, K. a., Perlin, M. J., Bylund, C. L., Carroll, G., Rouse, R. a., & Goldstein, M. G. (2009). Impact of communication training on physician expression of empathy in patient encounters. *Patient Education and Counseling*, 75(1), 3–10. doi:10.1016/j.pec.2008.09.007
- Brewer, M. B. (1979). In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin*, 86(2), 307–324. doi:10.1037/0033-

2909.86.2.307

- Brewer, M. B. (1999). The Psychology of Prejudice: Ingroup Love and Outgroup Hate? *Journal of Social Issues*, 55(3), 429–444. doi:10.1111/0022-4537.00126
- Bruneau, E. G., & Saxe, R. (2012). The power of being heard: The benefits of “perspective-giving” in the context of intergroup conflict. *Journal of Experimental Social Psychology*, 48(4), 855–866. doi:10.1016/j.jesp.2012.02.017
- Bunn, W., & Terpstra, J. (2009). Simulated Auditory Hallucinations. *Academic Psychiatry*, (December), 457–460.
- Cameron, C., & Payne, B. (2011). Escaping affect: how motivated emotion regulation creates insensitivity to mass suffering. *Journal of Personality and Social Psychology*, 100(1), 1–15. doi:10.1037/a0021643
- Carney, D. R., Cuddy, A. J. C., & Yap, A. J. (2010). Power posing: brief nonverbal displays affect neuroendocrine levels and risk tolerance. *Psychological Science : A Journal of the American Psychological Society / APS*, 21(10), 1363–1368. doi:10.1177/0956797610383437
- Chiao, J. Y., & Mathur, V. a. (2010). Intergroup empathy: how does race affect empathic neural responses? *Current Biology : CB*, 20(11), R478–80. doi:10.1016/j.cub.2010.04.001
- Chiu, C., & Dweck, C. S. (1997). Lay Dispositionism and Implicit Theories of Personality Behavior in One Situation Behavior in a, 73(I), 19–30.
- Cialdini, R. B. (2003). Crafting normative messages to protect the environment. *Current Directions in Psychological Science*, 12(4), 105–109. doi:10.1111/1467-8721.01242
- Cialdini, R. B., Reno, R. R., & Kallgren, C. a. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, 58(6), 1015–1026. doi:10.1037/0022-3514.58.6.1015
- Cikara, M., Bruneau, E. G., & Saxe, R. R. (2011). Us and Them: Intergroup Failures of Empathy. *Current Directions in Psychological Science*, 20(3), 149–153. doi:10.1177/0963721411408713
- Cikara, M., & Fiske, S. T. (2011). Bounded Empathy : Neural Responses to Outgroup Targets ' ( Mis ) fortunes. *Journal of Cognitive Neuroscience*, 23(12), 3791–3803.
- Clore, G. L., & Jeffery, K. M. (1972). Emotional role playing, attitude change, and attraction toward a disabled person. *Journal of Personality and Social Psychology*, 23(1), 105–111. doi:10.1037/h0032867
- Condon, P., Desbordes, G., Miller, W. B., & DeSteno, D. (2013). Meditation increases compassionate responses to suffering. *Psychological Science*, 24(10), 2125–2127. doi:10.1177/0956797613485603
- Dadds, M. R., Cauchi, a J., Wimalaweera, S., Hawes, D. J., & Brennan, J. (2012). Outcomes, moderators, and mediators of empathic-emotion recognition training for complex conduct problems in childhood. *Psychiatry Research*, 199(3), 201–207. doi:10.1016/j.psychres.2012.04.033



- Darley, J. M., & Batson, C. D. (1973). "From Jerusalem to Jericho": A study of situational and dispositional variables in helping behavior. *Journal of Personality and Social Psychology*, 27(1), 100–108. doi:10.1037/h0034449
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, 44(1), 113–126. doi:10.1037//0022-3514.44.1.113
- Davis, M. H., Mitchell, K. V, Hall, J. a, Lothert, J., Snapp, T., & Meyer, M. (1999). Empathy, expectations, and situational preferences: personality influences on the decision to participate in volunteer helping behaviors. *Journal of Personality*, 67(3), 469–503. doi:10.1111/1467-6494.00062
- Decety, J., Yang, C. Y., & Cheng, Y. (2010). Physicians down-regulate their pain empathy response: An event-related brain potential study. *NeuroImage*, 50(4), 1676–1682. doi:10.1016/j.neuroimage.2010.01.025
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256–273. doi:10.1037/0033-295X.95.2.256
- Eisenberg, N., & Miller, P. a. (1987). The relation of empathy to prosocial and related behaviors. *Psychological Bulletin*, 101(1), 91–119. doi:10.1037/0033-2909.101.1.91
- Elliott, E. S., & Dweck, C. S. (1988). Goals: an approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54(1), 5–12. doi:10.1037/0022-3514.54.1.5
- Epley, N., Caruso, E., & Bazerman, M. H. (2006). When perspective taking increases taking: reactive egoism in social interaction. *Journal of Personality and Social Psychology*, 91(5), 872–889. doi:10.1037/0022-3514.91.5.872
- Erdley, C. A., Cain, K. M., Loomis, C. C., Dumas-hines, F., & Dweck, C. S. (1997). Relations Among Children ' s Social Goals , Implicit Personality Theories , and Responses to Social Failure, 33(2), 263–272.
- Gaertner, S. L., & Dovidio, J. F. (1977). The subtlety of White racism, arousal, and helping behavior. *Journal of Personality and Social Psychology*, 35(10), 691–707. doi:10.1037/0022-3514.35.10.691
- Galinsky, A. D., Maddux, W. W., Gilin, D., & White, J. B. (2008). Why it pays to get inside the head of your opponent: the differential effects of perspective taking and empathy in negotiations. *Psychological Science*, 19(4), 378–84. doi:10.1111/j.1467-9280.2008.02096.x
- Goetz, J., Keltner, D., & Simon-Thomas, E. (2010). Compassion: an evolutionary analysis and empirical review. *Psychological Bulletin*, 136(3), 351–374. doi:10.1037/a0018807.Compassion
- Golan, O., & Baron-Cohen, S. (2006). Systemizing empathy: teaching adults with Asperger syndrome or high-functioning autism to recognize complex emotions using interactive multimedia. *Development and Psychopathology*, 18(2), 591–617. doi:10.1017/S0954579406060305
- Goyal, M. K., Kuppermann, N., Cleary, S. D., Teach, S. J., & Chamberlain, J. M. (2015).

- Racial Disparities in Pain Management of Children With Appendicitis in Emergency Departments. *JAMA Pediatrics*, 20010, 1–7. doi:10.1001/jamapediatrics.2015.1915
- Grant, a. M., & Hofmann, D. a. (2011). It's Not All About Me: Motivating Hand Hygiene Among Health Care Professionals by Focusing on Patients. *Psychological Science*, 22(12), 1494–1499. doi:10.1177/0956797611419172
- Grant, A. M. (2008). The significance of task significance: Job performance effects, relational mechanisms, and boundary conditions. *The Journal of Applied Psychology*, 93(1), 108–124. doi:10.1037/0021-9010.93.1.108
- Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1993). Emotional Contagion. *Current Directions in Psychological Sciences*, 2(808), 96–99. doi:10.1086/322897
- Hein, G., Silani, G., Preuschoff, K., Batson, C. D., & Singer, T. (2010). Neural responses to ingroup and outgroup members' suffering predict individual differences in costly helping. *Neuron*, 68, 149–60. doi:10.1016/j.neuron.2010.09.003
- Herbek, T. a., & Yammarino, F. J. (1990). Empathy Training for Hospital Staff Nurses. *Group & Organization Management*, 15(3), 279–295. doi:10.1177/105960119001500304
- Hojat, M., Louis, D. Z., Markham, F. W., Wender, R., Rabinowitz, C., & Gonnella, J. S. (2011). Physicians' empathy and clinical outcomes for diabetic patients. *Academic Medicine : Journal of the Association of American Medical Colleges*, 86(3), 359–364. doi:10.1097/ACM.0b013e3182086fe1
- Hong, Y., Dweck, C. S., Lin, D. M., & Wan, W. (1999). Implicit Theories , Attributions , and Coping : A Meaning System Approach, 77(3), 588–599.
- Hooker, C. I., Verosky, S. C., Germine, L. T., Knight, R. T., & D'Esposito, M. (2010). Neural activity during social signal perception correlates with self-reported empathy. *Brain Research*, 1308, 100–113. doi:10.1016/j.brainres.2009.10.006
- Ickes, W., Gesn, P. R., & Graham, T. (2000). Gender differences in empathic accuracy : Differential ability or differential motivation ? *Personal Relationships*, 7, 95–109. doi:http://dx.doi.org/10.1111/j.1475-6811.2000.tb00006.x
- Jacobs, D. (1977). *Role playing - Role reversal as a method for training adolescents in empathy*. Retrieved from Retrieved from <http://www.ruor.uottawa.ca/handle/10393/8194>
- Jazaieri, H., Lee, I. a., McGonigal, K., Jinpa, T., Doty, J. R., Gross, J. J., & Goldin, P. R. (2015). A wandering mind is a less caring mind: Daily experience sampling during compassion meditation training. *The Journal of Positive Psychology*, (July), 1–14. doi:10.1080/17439760.2015.1025418
- Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263–292.
- Klein, K. J. K., & Hodges, S. D. (2001). Gender Differences, Motivation, and Empathic Accuracy : When It Pays to Understand. *Personality and Social Psychology Bulletin*, 27(6), 720–730.
- Klimecki, O. M., Leiberg, S., Lamm, C., & Singer, T. (2013). Functional neural plasticity

- and associated changes in positive affect after compassion training. *Cerebral Cortex (New York, N.Y. : 1991)*, 23(7), 1552–61. doi:10.1093/cercor/bhs142
- Krasner, M. S., Epstein, R. M., Beckman, H., Suchman, A. L., Chapman, B., Mooney, C. J., & Quill, T. E. (2009). Association of an educational program in mindful communication with burnout, empathy, and attitudes among primary care physicians. *JAMA : The Journal of the American Medical Association*, 302(12), 1284–1293. doi:10.1001/jama.2009.1384
- Kunda, Z. (1990). The Case for Motivated Reasoning. *Psychological Bulletin*, 103(1), 480–498. Retrieved from <http://psycnet.apa.org/journals/bul/108/3/480/>
- Lanzetta, J. T., & Englis, B. G. (1989). Expectations of cooperation and competition and their effects on observers' vicarious emotional responses. *Journal of Personality and Social Psychology*, 56(4), 543–554. doi:10.1037//0022-3514.56.4.543
- Leiberg, S., Klimecki, O., & Singer, T. (2011). Short-term compassion training increases prosocial behavior in a newly developed prosocial game. *PloS One*, 6(3), e17798. doi:10.1371/journal.pone.0017798
- Levine, M., Prosser, A., Evans, D., & Reicher, S. (2005). Identity and emergency intervention: how social group membership and inclusiveness of group boundaries shape helping behavior. *Personality and Social Psychology Bulletin*, 31(4), 443–453. doi:10.1177/0146167204271651
- Lewin, K. (1943). Defining the “field at a given time.” *Psychological Review*, 50(3), 292–310. doi:10.1037/h0062738
- Lewin, K. (1952). Persistence and Change of Attitudes. In *Group decision and social change* (pp. 459–473).
- Lundqvist, L. O., & Dimberg, U. (1995). Facial expressions are contagious. *Journal of Psychophysiology*, 9(3), 203–211. doi:10.1016/S0167-8760(97)85514-6
- Marquié, L., Raufaste, E., Lauque, D., Mariné, C., Ecoiffier, M., & Sorum, P. (2003). Pain rating by patients and physicians: Evidence of systematic pain miscalibration. *Pain*, 102(3), 289–296. doi:10.1016/S0304-3959(02)00402-5
- Marsh, A. a, Finger, E. C., Mitchell, D. G. V, Reid, M. E., Sims, C., Kosson, D. S., ... Blair, R. J. R. (2008). Reduced amygdala response to fearful expressions in children and adolescents with callous-unemotional traits and disruptive behavior disorders.[Erratum appears in Am J Psychiatry. 2008 Jul;165(7):920], [Erratum appears in Am J Psychiatry. 2008 May;165(5): *American Journal of Psychiatry*, 165(6), 712–720. doi:appi.ajp.2007.07071145 [pii]10.1176/appi.ajp.2007.07071145
- Mehrabian, A. (1996). Manual for the balanced emotional empathy scale (BEES).
- Mehrabian, A., Young, A. L., & Sato, S. (1988). Emotional empathy and associated individual differences. *Current Psychology*, 7(3), 221–240. doi:10.1007/BF02686670
- Mitchell, J., Macrae, C., & Banaji, M. (2006). Dissociable medial prefrontal contributions to judgments of similar and dissimilar others. *Neuron*, 50(4), 655–63. doi:10.1016/j.neuron.2006.03.040

- Mitchell, J. P., Ames, D. L., Jenkins, A. C., & Banaji, M. R. (2009). Neural correlates of stereotype application. *Journal of Cognitive Neuroscience*, *21*(3), 594–604. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/18564038>
- Nook, E. C., Ong, D., Morelli, S. A., Mitchell, J. P., & Zaki, J. (n.d.). Prosocial Conformity: Prosocial norms generalize across behavior and empathy. doi:10.1093/biostatistics/manuscript-acf-v5
- Okimoto, T. G., & Wenzel, M. (2011). The Other Side of Perspective Taking: Transgression Ambiguity and Victims' Revenge Against Their Offender. *Social Psychological and Personality Science*, *2*, 373–378. doi:10.1177/1948550610393032
- Osofsky, M. J., Bandura, A., & Zimbardo, P. G. (2005). The role of moral disengagement in the execution process. *Law and Human Behavior*, *29*(4), 371–393. doi:10.1007/s10979-005-4930-1
- Paluck, E. L. (2007). Reducing intergroup prejudice and conflict with the mass media: A field experiment in Rwanda. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, *68*(6-B), 4179. doi:10.1037/a0011989
- Pancer, S. M., McMullen, L. M., Kabatoff, R. A., Johnson, K. G., & Pond, C. A. (1979). Conflict and Avoidance in the Helping Situation, *37*(8), 1406–1411.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751–783. doi:10.1037/0022-3514.90.5.751
- Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology Eur.*, *38*(March 2008), 922–934. doi:10.1002/ejsp
- Pierce, J. R., Kilduff, G. J., Galinsky, A. D., & Sivanathan, N. (2013). From glue to gasoline: how competition turns perspective takers unethical. *Psychological Science*, *24*(10), 1986–94. doi:10.1177/0956797613482144
- Prentice, D. a, & Miller, D. T. (1993). Pluralistic ignorance and alcohol use on campus: some consequences of misperceiving the social norm. *Journal of Personality and Social Psychology*, *64*(2), 243–256. doi:10.1037/0022-3514.64.2.243
- Riess, H., Kelley, J. M., Bailey, R. W., Dunn, E. J., & Phillips, M. (2012). Empathy training for resident physicians: a randomized controlled trial of a neuroscience-informed curriculum. *Journal of General Internal Medicine*, *27*(10), 1280–6. doi:10.1007/s11606-012-2063-z
- Schumann, K., Zaki, J., & Dweck, C. S. (2014). Addressing the empathy deficit: Beliefs about the malleability of empathy predict effortful responses when empathy is challenging. *Journal of Personality and Social Psychology*, *107*(3), 475–93. doi:10.1037/a0036738
- Shaw, L. L., Batson, C. D., & Todd, R. M. (1994). Empathy avoidance: Forestalling feeling for another in order to escape the motivational consequences. *Journal of Personality and Social Psychology*, *67*(5), 879–887. Retrieved from <http://doi.apa.org/getdoi.cfm?doi=10.1037/0022-3514.67.5.879>

- Shechtman, Z., & Tanus, H. (2006). Counseling Groups for Arab Adolescents in an Intergroup Conflict in Israel: Report of an Outcome Study. *Peace and Conflict: Journal of Peace Psychology, 12*(2), 119–137. doi:10.1207/s15327949pac1202\_2
- Sherif, M. (1936). *The psychology of social norms*. New York: Harper & Row.
- Sherif, M. (1958). Superordinate Goals in the Reduction of Intergroup Conflict. *American Journal of Sociology, 63*(4), 349–356.
- Singer, T., Seymour, B., & O’Doherty, J. (2006). Empathic neural responses are modulated by the perceived fairness of others. *Nature, 439*(7075), 466–9. doi:10.1038/nature04271
- Soble, J. R., Spanierman, L. B., & Liao, H.-Y. (2011). Effects of a brief video intervention on White university students’ racial attitudes. *Journal of Counseling Psychology, 58*(1), 151–157. doi:10.1037/a0021158
- Sonnby-Borgström, M., Jönsson, P., & Svensson, O. (2003). Emotional empathy as related to mimicry reactions at different levels of information processing. *Journal of Nonverbal Behavior, 27*(1), 3–23. doi:10.1023/A:1023608506243
- Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology, 33*, 1–39. Retrieved from <http://www.annualreviews.org/doi/pdf/10.1146/annurev.ps.33.020182.000245>
- Tarrant, M., Dazeley, S., & Cottom, T. (2009). Social categorization and empathy for outgroup members. *British Journal of Social Psychology, 48*(3), 427–446. doi:10.1348/014466608X373589
- Thomas, G., & Maio, G. R. (2008). Man, I feel like a woman: when and how gender-role motivation helps mind-reading. *Journal of Personality and Social Psychology, 95*(5), 1165–79. doi:10.1037/a0013067
- Trawalter, S., Hoffman, K. M., & Waytz, A. (2012). Racial Bias in Perceptions of Others’ Pain. *PLoS ONE, 7*(11), 1–8. doi:10.1371/journal.pone.0048546
- van Berkhout, E., & Malouff, J. (2015). The Efficacy of Empathy Training: A Meta-Analysis of Randomized Controlled Trials. *Journal of Counseling Psychology, 1–10*. Retrieved from <http://psycnet.apa.org/psycinfo/2015-32537-001/>
- Vorauer, J. (2013). *The Case For and Against Perspective-Taking. Advances in Experimental Social Psychology* (1st ed., Vol. 48). Elsevier Inc. doi:10.1016/B978-0-12-407188-9.00002-8
- Walton, G. M. (2014). The New Science of Wise Psychological Interventions. *Current Directions in Psychological Science, 23*(1), 73–82. doi:10.1177/0963721413512856
- Webster, S. D., Bowers, L. E., Mann, R. E., Marshall, W. L., & E, L. (2005). Sexual Abuse : A Journal of Research and Treatment. *Sexual Abuse a Journal of Research and Treatment, 17*(1), 63–77. doi:10.1177/107906320501700107
- Wei, M., Liao, K. Y. H., Ku, T. Y., & Shaffer, P. A. (2011). Attachment, Self-Compassion, Empathy, and Subjective Well-Being Among College Students and Community Adults. *Journal of Personality, 79*(1), 191–221. doi:10.1111/j.1467-6494.2010.00677.x

- Weng, H. Y., Fox, A. S., Shackman, A. J., & Stodola, D. E. (2013). Compassion training alters altruism and neural responses to suffering, *24*(7), 1171–1180. doi:10.1177/0956797612469537.Compassion
- Wilkes, M., Milgrom, E., & Hoffman, J. R. (2002). Towards more empathic medical students: A medical student hospitalization experience. *Medical Education*, *36*(6), 528–533. doi:10.1046/j.1365-2923.2002.01230.x
- Wilson, T. D., & Linville, P. W. (1982). Improving the academic performance of college freshmen: Attribution therapy revisited. *Journal of Personality and Social Psychology*, *42*(2), 367–376. doi:10.1037/0022-3514.42.2.367
- Xu, X., Zuo, X., Wang, X., & Han, S. (2009). Do you feel my pain? Racial group membership modulates empathic neural responses. *The Journal of Neuroscience*, *29*(26), 8525–8529. doi:10.1523/JNEUROSCI.2418-09.2009
- Yamada, M., Lamm, C., & Decety, J. (2011). Pleasing frowns, disappointing smiles: An ERP investigation of counterempathy. *Emotion*, *11*(6), 1336–1345. doi:10.1037/a0023854
- Yeager, D. S., Trzesniewski, K. H., Tirri, K., Nokelainen, P., & Dweck, C. S. (2011). Adolescents' Implicit Theories Predict Desire for Vengeance After Peer Conflicts: Correlational and Experimental Evidence. *Developmental Psychology*, *47*(4), 1090–1107. doi:10.1037/a0023769
- Yeager, D. S., & Walton, G. M. (2011). Social-Psychological Interventions in Education: They're Not Magic. *Review of Educational Research*, *81*(2), 267–301. doi:10.3102/0034654311405999
- Zaki, J. (2014). Empathy: A motivated account. *Psychological Bulletin*, *140*(6), 1608–1647. Retrieved from <http://psycnet.apa.org/journals/bul/140/6/1608/>
- Zaki, J., & Cikara, M. (2015). Addressing Empathic Failures. *Current Directions in Psychological Science*, *24*(6), 471–476. doi:10.1177/0963721415599978
- Zaki, J., & Ochsner, K. (2012). The neuroscience of empathy: progress, pitfalls and promise. *Nature Neuroscience*, *15*(5), 675–80. doi:10.1038/nn.3085

**Table 1: Summary of experience-based and expression-based interventions.**

Study	Participants	Type	Training	Outcome
Batson et al. (1997)	Female college students	Experiential	Asked to imagine life and feelings of stigmatized targets (AIDS patient, homeless person, murderer)	More positive attitudes towards members of stigmatized group
Batson et al. (2002)	College students	Experiential	Asked to imagine life and feelings of stigmatized target (drug dealer)	Prosocial action on behalf of stigmatized group
Bunn & Terpstra (2009)	Medical Students	Experiential	Audio hallucination simulation during neuropsychological testing	Higher score on Jefferson Scale of Physician Empathy
Condon et al. (2013)	Adults	Experiential	Attended meditation classes led by Tibetan Buddhist lama for 8 weeks	Increased rates of helping a suffering individual
Clore & Jeffery (1972)	College Students	Experiential	College students travelled around campus in wheel chair	Improved attitudes towards disabled people
Jacobs (1977)	Adolescents	Experiential	Students role play adolescent interpersonal interactions	No changes in empathy measures
Jazaieri et al. (2015)	Adults	Experiential	Participants attended classes on compassion-focused meditation and engaged in daily home meditation	Compassion training increased mindfulness and happiness, which was related to increased caring for others

Klimecki et al. (2012)	Adults	Experiential	Attended 1-day course of loving kindness meditation	Increased positive affect in response to distress, and increased activity in brain regions supporting affiliation and positive affect
Schectman & Tanus (2006)	Arab students	Experiential	Multi-session intervention including reading a letter from a Jewish mother	Increased empathy and reduced hostility toward Israelis
Soble et al. (2011)	College Students	Experiential	Video intervention documenting institutional racism	Increased empathy and racial awareness
Webster et al. (2005)	Sex offenders	Experiential	Sex offenders complete role-play paradigms	Improved recognition of consequences for victims
Wilkes et al. (2002)	Medical Students	Experiential	Medical students admitted to stay overnight in hospital	Students endorse interest in improving hospital condition
Weng et al. (2013)	Adults	Experiential	Participants listened to 30-minute audio recordings featuring compassion meditation	Compassion meditation increased altruistic behavior and activity in brain regions supporting social cognition and emotion regulation
Archer & Kagan (1973)	College Students	Expressive	Emotion recognition & empathic responding	Improved peer relationship rating scores and performance on affect sensitivity scale.
Back et al. (2007)	Oncology fellows	Expressive	Communication training workshop	Improved in communication skills, including empathic verbal skills



Bonvicini et al. (2009)	Physicians	Expressive	Communication training workshop	Training increased physicians' global empathy and empathy expressions during patient interactions
Dadds et al. (2011)	Children with behavioral/emotional problems	Expressive	Emotion recognition training	Improvements in affective empathy and conduct problems in kids with high callous/unemotional traits
Golan & Baron-Cohen (2006)	Adults with Asperger syndrome	Expressive	Computer-based training in recognizing emotions in faces and voices	Improvements on similar emotion recognition tasks (but not dissimilar tasks)
Riess et al. (2012)	Otolaryngology residents	Expressive	Empathy-relational skills training focused on underlying neurobiology of empathy	Improved knowledge of neurobiology of empathy, self-reported capacity to empathize, and patient satisfaction