Enhancing compassion: Social psychological perspectives

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Enhancing compassion: Social psychological perspectives

Social psychology's contribution to the study of compassion begins with notorious examples of human failures to act compassionately. The early years of experimental social psychology were infamous for demonstrating the power of situations to hinder compassionate responses to the needs of others. The murder of Kitty Genovese in 1964, allegedly witnessed by 38 nonresponsive onlookers, sparked public and academic interest in the situational forces that cause onlookers to ignore the plights of others.[1] Experimental research later confirmed that the presence of nonresponsive onlookers typically led to a reduction in helping behavior, called "the bystander effect" (Darley & Latané, 1968; Fischer et al., 2011; Latané & Nida, 1981). Further research demonstrated that situations can reduce prosocial responding even among those who have dedicated their lives to values such as compassion. In a highly cited study, seminary students under time pressure to reach a destination and deliver a lecture related to generosity and compassion were less likely to help an actor portraying a homeless man, compared with those students who were not under time pressure (Darley & Batson, 1973). Stanley Milgram's research on obedience demonstrated the overwhelming tendency of people to obey authorities, even when authorities encouraged harm toward others, thereby overriding any impulse for compassionate action (Milgram, 1963). Our academic field blossomed by focusing on situations that prevented compassionate action toward those in need. Fortunately, social psychologists later uncovered situational factors that also enhance compassion.

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[1] At the time, and for many years following, the historical record suggested that 38 onlookers in a busy, metropolitan setting witnessed the murder of Ms. Genovese but failed to come to her assistance. The case of Ms. Genovese has recently been reconstructed, with some authors suggesting that there is no evidence that 38 onlookers directly observed the incident (Manning, Levine, & Collins, 2007). Nevertheless, the event was an impetus for academic interest in situational influences on prosocial behavior (Batson, 2012).

The dawn of the 1980s witnessed a shift toward a focus on emotional or affective states that facilitate prosocial responding, which yielded two key insights about compassion. First, social psychologists demonstrated that other-oriented emotional states promoted helping behavior aimed to alleviate another's suffering. This work, usually employing the term "empathic concern" as opposed to "compassion", comprised much of the social psychological literature on helping behavior in the late twentieth century (Batson, 1991, 2011; Eisenberg & Miller, 1987). Across numerous experimental settings, experiences of compassion for another increased the probability of costly helping, independent of other self-interested motivations, including desires to 1) reduce one's own aversive, empathic arousal; 2) avoid social punishment and self-criticism for failing to help; and 3) gain social rewards or self-praise for helping (Batson, 1991, 2011). Moreover, these other-oriented experiences had unique predictive validity compared with experiences of empathic distress. Compassion or empathic concern therefore appeared to represent a unique emotional state in which an onlooker feels *for* another, rather than feeling *as* another, combined with the desire to alleviate another's suffering (Batson, 1991, 2011). This perspective resonates with modern conceptualizations of compassion in social psychology, which define compassion as an affective state that promotes costly helping behavior in response to the suffering of others (Goetz, Keltner, & Simon-Thomas, 2010).

The second key contribution from social psychology suggested that compassion-based emotional responses are modulated by subtle situational cues. The perceived characteristics of a target, for example, can have a dramatic impact on the likelihood that an onlooker will experience compassion and act to help. The degree to which an onlooker perceives a sense of similarity with another predicts helping behavior beyond empathic concern (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997). These results coincide with findings that people provide more

help and resources to members of an in-group (Tajfel & Turner, 1985). Thus, compassion-related states can be tuned up or down depending on the subtle cues that signal a sense of similarity or oneness (Penner, Dovidio, Piliavin, & Schroeder, 2005; Schroeder, Penner, Dovidio, & Piliavin, 1995). The implications are particularly germane to this volume: the general human capacity for compassionate affective states suggests that social psychologists can use situational factors and training programs to enhance the likelihood of compassionate states and prosocial behaviors.

In the remainder of this chapter, we review social psychological research that demonstrates why compassion is fundamental to human social living and examine ways to enhance it. In particular, we organize our review around the two key contributions described above. First, we will examine social psychological literature on compassion-based emotional experiences that impact prosocial decisions. Second, we will examine ways to enhance compassion, including situational cues and meditation-based training programs. We conclude by raising open questions and recommending future research.

Compassion as a Moral Force

A fundamental problem of human social living concerns the development of cooperative social relationships and communities. Emotion theorists have long considered the role of emotional states in serving specific functions in favor of long-term relationships (e.g., Frank, 1988). For social beings, navigating the social terrain is key to survival just as is navigating the physical terrain (e.g., avoiding predators, securing food). In this perspective, emotions are functional—they motivate people to behave in ways that solve problems of adaptive importance. Emotional states, such as gratitude, love, and compassion, should function to encourage a person to behave in ways that facilitates relationships in the long run, even if behaviors carry a cost in the short term (DeSteno, 2009; Frank, 1988). Compassion is an affective state that has clear

implications for prosocial behavior, caregiving, and relationship formation across the lifespan (Batson, 1991, 2011; Goetz et al., 2010). Yet compassion appears to function as more than a simple motivator of prosocial behavior—it appears to serve as an affective state that mitigates harm in the world and extends our willingness to help others.

The status of compassion as a moral emotion capable of driving intuitive judgments and behavior beyond simple helping responses, such as decisions to forgive or punish another, in particular, carries high interest across disciplines. Goetz et al. (2010) suggested that compassion, like other moral emotions, may act as a moral intuition with the motivation to remedy unjustified harm and increase individual freedom and rights. Similarly, Singer and Steinbeis (2009) suggest that compassion-based, in contrast to fairness-based, motivations for cooperation and punishment can counteract the desire for revenge and subsequent downward escalations into iterative noncooperation. To the extent that punishment violates kindness and concern for another's well-being, it follows that a compassionate emotional response should indeed reduce punitive tendencies.

Theorists suggest that compassion manifests from the need to provide care to vulnerable and weak offspring (Goetz, Keltner, & Simon-Thomas, 2010; Mikulincer & Shaver, 2005). However, like other phenomena that result from natural selection, compassion may act as a spandrel that occasionally affects interactions beyond the conditions that led to its emergence, in this case, those with non-kin (Sober, 2002). As such, compassion may function to alter moral decisions that favor relationships outside of familial bonds (Goetz et al., 2010). These principles suggest that compassion may indeed represent a fundamental capacity of the human emotional repertoire. In this section, we review work demonstrating that compassion supports relationships by motivating decisions and moral behaviors beyond those tied to direct prosocial helping (see

Batson, in this Handbook, for a review of research the relationship between compassion and helping behavior).

Compassionate motives have been demonstrated to predict the development of novel relationships. Crocker and colleagues have studied the experiences of first-semester college freshman who were randomly assigned a roommate and demonstrated that people who care about the wellbeing of others (i.e., those motivated by "compassionate goals") were more likely to satisfy their own and others' needs compared with those who were motivated by self-interest (i.e., "self-image goals") (see Crocker & Canevello, 2012 for review). Whereas pursuing self-esteem can have various short- and long-term costs, including a reduced sense of relatedness and increased anxiety and depression, caring for the wellbeing of others indirectly promotes one's own wellbeing through the building of social capital (Crocker & Canevello, 2008). Based on longitudinal data that tracked college freshman over their first semester, Crocker and Canevello found that those who maintained compassionate goals, compared with those who prioritized self-image goals, provided more support to others in the context of new relationships. Furthermore, those individuals who simultaneously endorsed high compassionate goals and low self-image goals reported receiving greater social support and greater interpersonal trust among friends and significant others. Thus, compassionate dispositions appeared to support the development of emerging relationships. These findings also suggest a positive impact of compassion on overall wellbeing: compassionate goals predicted downstream psychological wellbeing as indicated by self-reported feelings of trust, closeness, and reduced loneliness and interpersonal conflict (Crocker & Canevello, 2008).

The effects of compassion on the development of cooperative relationships may also extend to larger groups beyond dyadic relationships. Empirical evidence supports the notion that

cooperative groups accumulate the largest amounts of resources over time compared with groups that engage in punitive action. Using simulated economic exchanges, Dreber and colleagues demonstrated that groups that refrain from punitive action reap greater communal gains compared with groups characterized by punitive behavior (Dreber, Rand, Fudenberg, & Nowak, 2008). In short, cooperation, rather than punishment, promotes a flourishing community. It is therefore of great value to identify the factors that might promote cooperation despite uncertainty about potential losses of resources in the short-run. In this vein, our laboratory has taken interest in the potential of compassion as a moral motivator that can extend prosocial behavior and forgiveness toward those who have committed social violations or transgressions.

Initial investigation of the impact of compassion on moral decision-making have produced findings indicating that compassion can promote a reduction in punishment directed at individuals who commit a transgression, even in cases where the transgression occurs against a third party and no forgiveness is sought (Condon & DeSteno, 2011). Using an orchestrated scenario, we had participants witness a confederate (i.e., an actor) cheat on a task to win money. Participants later had the opportunity to punish the transgressor by deciding the amount of hot sauce he would be forced to consume (cf. Lieberman, Solomon, Greenberg, & McGregor, 1999). Some participants were also exposed to the intense sadness of a nearby female confederate. As expected, the experience of compassion in response to the female confederate's sadness mediated a reduction in the amount of hot sauce administered to the transgressor. Compassion may therefore function as an effective mechanism for reducing escalations of violence. Although unpunished transgressions could prove costly, the avoidance of aggressive action can result in less psychological stress and greater hedonic wellbeing in the long-run (Bushman, 2002;

Carlsmith, Wilson, & Gilbert, 2008), suggesting that compassionate action even toward transgressors may prove worthwhile.

An emerging question concerns the manner in which compassion promotes cooperative behavior in contexts that involve moral violations. The motivation to reduce suffering would likely lead individuals to endorse policies and values that protect the rights of others (Goetz et al., 2010). In turn, it is likely that compassion would motivate an individual to correct the actions of a transgressor with the ultimate aim to reduce collective suffering, albeit in a non-violent manner that minimizes the transgressor's suffering. This interpretation remains speculative, however, and awaits empirical investigation. Furthermore, although we have demonstrated compassion's ability to reduce punishment when the distress of a victim is causally dissociated from the act of a transgressor, it remains an open question whether the same relation would hold true when a victim's suffering is due to the actions of a transgressor. In such cases, the level of distress observed, and therefore the level of compassion felt, might covary tightly with the level of animosity directed at the cause of the suffering (i.e., the transgressor). In such cases, it is possible that the influence of elevated compassion might be associated with desires to punish the source of the distress (e.g., Meyers, Lynn, & Arbuthnot, 2002; Keller & Pfattheicher, 2013). Recent work on contemplative practice (which we review in greater detail below) has shown that compassion training can increase behavior meant to punish a transgressor when the punishment would benefit a victim (Weng et al., 2013). Yet it remained unclear if the actions were motivated by the desire to punish the transgressor or help the victim. Follow up work revealed that, given a choice, participants who received compassion training were more likely to give resources to help a victim, but were not more likely to punish a transgressor (Weng et al., 2015). Depending upon which mechanisms underlie compassion's influence, the exact nature of the interplay of these

forces is difficult to predict. In sum, compassion supports the development of novel relationships and communal interest, in part by encouraging people to forego short-term benefits for the self. In turn, these findings raise the question of how to foster compassionate emotional states and behaviors.

Enhancing Compassion

The empirical data that has accumulated over the past two decades painted a picture of human beings as capable of prosocial emotional states that encourage behaviors which favor the interests of a relationships over the long-term, even if such behaviors incur short-term costs (e.g., time, resources) for the self. These findings suggest the possibility of using social psychological approaches to enhance compassionate emotional states and prosocial action. In this respect, two key themes have recently emerged: first, the possibility of increasing compassion through chronic training of the mind, and second, the possibility of facilitating compassion through subtle, situational cues that modulate how the mind responds to others.

Social psychological investigations of meditation. Scientists have been conducting empirical investigations of meditation for many decades, beginning as early as the 1930s (see Houshmand, Harrington, Saron, & Davidson, 2002). The majority of early scientific investigations of meditation focused on the health and cognitive benefits generated from repeated-practice over a sustained period of time. Empirical studies demonstrated that various forms of meditation practice generated enhanced brain activity in attention relevant brain regions and networks (Cahn & Polich, 2006; Fox et al., 2014; Holzel et al., 2012; Vago & Silbersweig, 2012) enhanced cognitive performance (Slagter, Lutz, Greischar, Nieuwenhuis, & Davidson, 2009) and enhanced mental and physical health (Grossman, Niemann, Schmidt, & Walach, 2004;

Hofmann, Sawyer, Witt, & Oh, 2010). Perhaps surprisingly, however, little of this early work examined the ability of meditation to enhance social or relational outcomes.

The focus on basic cognitive skills can be attributed in part to the assumption among scientists that meditation practices primarily targeted basic cognitive processes (see Davidson, 2010, for a review). In fact, the most ubiquitous form of Buddhist meditation (i.e., *śamatha*) is aimed at improving concentration (Lutz, Dunne, & Davidson, 2007). Moreover, the primary figures who initiated Buddhist-scientific dialogues were biologists and neuroscientists who had great interest in mind-brain correspondence and subjective experience (e.g., Hayward & Varela, 1992; Varela, Thompson, & Rosch, 1992), which accounted for an expansion of empirical research on the effects of meditation on the neural correlates of cognitive activity. Nevertheless, attention to Buddhist philosophical traditions reveals that meditation and related practices are also aimed at altering cognitive and emotional states to support the development of virtuous mental states and behavior that counteract the causes of suffering (i.e., greed, hatred, and delusion; Gethin, 1998).

Several scientific papers have highlighted the potential role of meditation in cultivating positive interpersonal outcomes (Brown, Ryan, & Creswell, 2007; Ekman, Davidson, Ricard, & Wallace, 2005; Lutz et al., 2007; Vago & Silbersweig, 2012). Brown and colleagues (Brown et al., 2007), for example, asserted that the quality of attention and awareness developed via mindfulness meditation should increase attentiveness not only to one's own internal state, but also to others' thoughts, emotions, and wellbeing, and therefore increase the capacity for communication and reduce destructive behaviors. Yet the early empirical research had been limited in quantity and in its ability to make strong assertions about the causal efficacy of meditation for promoting virtuous mental states and behavior qualities. Many studies relied on

self-report or measurements of neural activity removed from the contexts of everyday life. As such, the early literature was limited in its ability to make causal claims about the role of meditation in promoting virtues outcomes. The past five years, however, has witnessed a growth in empirical research aimed to address this lacuna in knowledge.

Many empirical examinations of meditation have examined the impact of mindfulness, loving-kindness, and compassion training on self-reported positive emotions, social connectedness, and compassion. In one notable line of research, Fredrickson and colleagues (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Kok et al., 2013) examined the influence of a 6-week training program in loving-kindness meditation (LKM) on daily experiences of positive emotions and post-training outcomes related to cognitive, psychological, physical, and social resources. They demonstrated that participants completing LKM, compared with those assigned to a wait-list control (WLC), reported increased positive emotion (e.g., amusement, awe, contentment, gratitude, hope, interest, joy, love, and pride) throughout the training (Fredrickson et al., 2008; Kok et al., 2013). Furthermore, increases in positive emotion accounted for increases in a variety of personal resources, including self-reported positive relations with others and perceived social connection (Fredrickson et al., 2008; Kok et al., 2013). A number of further studies examining the effects of compassion and/or loving-kindness training have produced similar increases in self-reported compassion and related prosocial qualities (Jazaieri et al., 2013; Neff & Germer, 2013; Sahdra et al., 2011; Wallmark, Safarzadeh, Daukantaitė, & Maddux, 2013). These studies provided initial evidence that various forms of meditation increased qualities such as empathy, compassion, and positive interpersonal functioning.

Yet there remained uncertainty regarding claims of meditation and prosocial, virtuous outcomes, largely due to reliance on self-report methods. People generally have limited access to

the processes underlying conscious experience (Nisbett & Wilson, 1977). Beliefs or heuristics about emotional states and the self can influence retrospective and general ratings of past emotional states (Barrett, 1997; Robinson & Clore, 2002a, 2002b). Men and women, for example, rate themselves differently when using aggregate measures that are influenced by gender role knowledge, but not when they are reporting on momentary states (Barrett, Robin, Pietromonaco, & Eyssell, 1998; Robinson, Johnson, & Shields, 1998). The methods used in the literature on meditation and prosocial outcomes suffered a similar limitation: participants were generally asked to provide global ratings of compassion and related qualities before and after a 6- to 8-week course. These scales require the participant to summarize a variety of experiences (e.g., over the past 24 hours, week, month, or one's lifetime) and aggregate them to make a global judgment about their general affective state or social behavior. Yet these global judgments are typically driven by stereotypical information about emotions (i.e., beliefs about emotions) rather than precise information about emotional instances or episodes themselves (Robinson & Clore, 2002a,b).

Concerns about self-report methods are particularly salient in meditation studies. People participating in studies that offer training in meditation are likely motivated to report that meditation was effective. As several contemplative scientists have recognized, self-report measures concerning meditation-related qualities, such as mindfulness, are likely to conflate achievement with aspiration (Grossman & Van Dam, 2011). Despite these concerns, the early work helped establish a research focus on the ethical and moral qualities that emerge from training in contemplative practice. These studies suggest that compassion and loving-kindness training lead people to believe that they are more compassionate and socially connected, and such beliefs might account for positive interpersonal outcomes such as social support, but they

remain limited in their ability to support conclusions about meditation and compassionate action in real-time social interactions. Measures that move beyond retrospective self-report will be critical for testing whether meditation promotes virtuous outcomes. In accordance with this view, Lutz et al. (2007) called for research that examines how meditation affects behavior outside of the laboratory and basic mental functions in everyday life. This perspective echoes the message from social psychologists who have called for the use of field research and real-world behavior throughout psychology (Baumeister, Vohs, & Funder, 2007; Cialdini, 2009).

Studies to date have measured behaviors indirectly related to compassion and the reduction of another's suffering. Measures used to assess prosocial behavior, for example, include implicit categorization of social stimuli as a measure of social affiliation (Hutcherson, Seppala, & Gross, 2008; Kang, Gray, & Dovidio, 2014), non-verbal behaviors indicating affiliation, interest, or a lack of hostility (Kemeny et al., 2012), or economic generosity in computer-based video games and transactions (Leiberg, Klimecki, & Singer, 2011; Weng et al., 2013). A brief 7-minute LKM practice in the laboratory, for example, has been shown to effect explicit and implicit positive social evaluations of neutral others even after very brief practice (i.e., Hutcherson et al., 2008), thus providing evidence for potential links between meditation and interpersonal harmony. Research in this direction has also shown that LKM reduces implicit prejudice toward different social groups (Kang et al., 2014). These studies are encouraging and suggestive of the role that meditation might play in promoting positive social behaviors and relationships.

A number of researchers, including our colleagues in the present volume, investigated the impact of meditation on neural reactivity to the suffering of others (see chapters by Singer & Klimecki; Weng & Davidson). Several independent groups have demonstrated that compassion-

based meditation – a technique similar to, but distinct from LKM – increased empathic responses to others' suffering (Klimecki, Leiberg, Ricard, & Singer, 2014; Lutz, Brefczynski-Lewis, Johnstone, & Davidson, 2008; Mascaro, Rilling, Tenzin Negi, & Raison, 2013). Moreover, this increased empathic response has been shown to predict subsequent prosocial acts. As one example, loving-kindness-based training increased economic generosity in computer-based transactions, which were predicted by mediation-induced changes in neural reactivity to others' suffering (Weng et al., 2013; see chapters in this volume by Singer & Klimecki; Weng & Davidson).

Even as scientists have begun to examine the effects of meditation on prosocial behavior, the conclusions that could be drawn with respect to compassion were limited by designs that lack real-time person-to-person interactions centered on suffering. Prior studies utilized meditators' behavior in computer-based economic games requiring economic generosity or cooperation (e.g., Leiberg, Klimecki, & Singer, 2011; Weng et al., 2013, 2015) to assess altruistic action. Such methods, while suggesting that meditation may increase generalized prosocial responding, do not directly gauge responses meant to mitigate the suffering of others. Social psychology stands to make critical contributions through methods that assess behavior in real time.

In an effort to link meditation to compassionate responses to the suffering of others directly, we constructed a paradigm designed to reduce demand by unobtrusively measuring behaviors outside of a laboratory context. We utilized confederates (i.e., actors and actress feigning participation in research studies) to expose participants to the suffering of another individual outside the laboratory. All confederates remained blind to the hypotheses of a given experiment and to each participant's experimental condition. Prior to the participant's arrival, two female confederates sat in a designated waiting area possessing three chairs. Upon arriving

at the waiting area, participants sat in the last remaining chair. After the participant had been sitting for one minute, a third female confederate, who played the role of the "sufferer," appeared around the corner with crutches and a large walking boot. The sufferer, who visibly winced while walking, stopped just as she arrived at the chairs. She then looked at her cell phone, audibly sighed in discomfort, and leaned back against a wall.

To assess compassionate responding, we measured whether the true participant offered his or her seat to the sufferer to relieve her pain. One of the sitting confederates surreptitiously notified the experimenter, who was waiting out of sight, via text message whether the participant offered the seat to the sufferer. If two minutes passed and the participant had not given up his or her seat, the trial was ended and coded as a non-helping response. The experimenter then entered the waiting area, greeted the participant, and escorted him or her to the lab to complete a series of unrelated measures. Of greatest import, this scenario constitutes a classic "bystander" situation, in which the presence of non-responsive others typically leads to a reduction in helping (Darley & Latané, 1968; Fischer et al., 2011).

Our initial research demonstrated that eight-weeks of training in either compassion- or mindfulness-based meditation significantly enhanced the likelihood that individuals would offer their seat to relieve the pain of the suffering confederate (50%), compared with those in a wait-list control (15%) (Condon, Desbordes, Miller, & DeSteno, 2013) (Condon, Desbordes, Miller, & DeSteno, 2013). This enhanced compassionate response occurred even within the context of bystander situation in which others ignore the other's suffering (Darley & Latané, 1968). Importantly, the mindfulness-based training group did not include any explicit discussions of compassion or features of compassion training.Those completing compassion- and mindfulness-training were equally likely to provide help, suggesting that discussions of compassion that

occurred within the compassion course were not entirely responsible for producing enhanced

compassionate action (see Table 1 for results).

Table 1a. *Observed and expected frequencies of helping behavior across conditions* (from Condon, Desbordes, Miller, & DeSteno, 2013).

Outcome	Meditation Training		Wait-list Control	
	Observed	Expected	Observed	Expected
Did not help	10	13.3	16	12.7
Helped	10	6.7	3	6.3

Note. $\chi^2(1)=5.13$, *p*=.02.

Table 1b.
Observed and expected frequencies of helping behavior by meditation group (from Condon, Desbordes, Miller, & DeSteno, 2013).

Outcome	Mindfulness-group		Compassion-group	
	Observed	Expected	Observed	Expected
Did not help	5	4.5	5	5.5
Helped	4	4.5	6	5.5

Note. $\chi^2(1)=0.20$, *p*>.65

Taken together, these results provided intial confidence that compassion and

mindfulness-mediation can enhance compassionate responding beyond the influence of demand

charateristics and partcipant expectation. Yet much like other studies in the literature on

meditation, the nature of our design required that one group (i.e., meditators) came together for

repeated classes, thereby creating a context that afforded interaction with other individuals

participating in the study. The waitlist group had no such possibility of interacting with others

due to participation in a structured class. The experience of repeated interaction with fellow

participants in a meditation course may have produced social consequences that could account

for increased levels of helping behavior relative to a wait-list control (e.g., increased social

resources). To rule out this possibility, we obtained a measure of the number of people that participants interacted with on a regular basis before and after training using the Social Network Index (Cohen, Doyle, Skoner, Rabin, & Gwaltney, 1997). Participants indicated the number of regular social contacts they interacted by listing the initial s of each individual they interacted with at least once every two weeks across a range of social categories (e.g., *roommates, co-workers, family, friends, acquaintances*). If the meditation classes increased social capital, we would expect to find that those in the meditation group reported an increase in their number of relationships at post-testing, relative to the wait-list group. Yet participants in the meditation group did not experience a growth in their social network as a function of participating in an organized class. Thus, increases in social capital as a result of participating in a group activity are unlikely to account for our central finding. Nevertheless, we employed an active control group in subsequent research to address this limitation directly.

Given that many individuals will not have easy access to meditation courses taught in person by expert practitioners or other certified teachers, we designed a subsequent experiment to examine the ability of meditation trainings delivered via mobile devices to produce a similar increase in compassionate action (Lim, Condon, & Desteno, 2015). If so, the scalability of using meditation as a compassion intervention would appear promising, as individuals could practice at their convenience during daily life simply through utilizing a smartphone. Indeed, Weng et al. (2013) utilized specially created audio segments supplied as compact discs or audio files as a primary tool for training in compassion meditation to good success. However, the use of such techniques to enhance behaviors directly targeting the relief of suffering within a face-to-face interpersonal context remained to be explored.

We utilized a framework similar to that of our previous work (Condon et al., 2013) in which participants would take part in a brief course of meditation or not, and then be exposed to a situation that confronted them with the opportunity to relieve the pain of another. Although similar in structure to our previous work, this experiment possessed three key differences. The first involved the use of an active control group. Given that the simple act of regular engagement in a task (as opposed to being assigned to a waiting list for a meditation course) might itself produce affective or motivational changes, control participants in the present experiment took part in a memory and cognitive skills training program. The second, as noted above, involved the use of a smartphone-based method of instruction (for both the meditation and control courses of instruction). In our previous work, a Buddhist lama delivered meditation instruction; here, meditation instructions were provided through the commercially available Headspace platform, which was designed by an individual with Buddhist monastic training. Finally, the current research focused solely mindfulness meditation as opposed to compassion meditation. Compassion training specifically emphasizes the importance of examining the feelings of others and wishing for their freedom from suffering, and as such, raises the possibility that effects on prosocial behavior could stem from demand characteristics. Here, we solely examined the effects of mindfulness meditation on prosocial action removed from concerns involving demand.

As before, those completing mindfulness training, which did not include explicit discussions of compassion or features of compassion training, demonstrated an increased rate of compassionate responding to a confederate in need (37%) compared with those in the active control group (14%) (see Table 2). Of additional importance, the relative level of compassionate action in the active control group matched that of the wait-list control group (16%) from our earlier work, suggesting that the 23% increase in helping among meditating participants

represents an increase from baseline (i.e., as opposed to stemming from the active control training somehow producing a decrease in what would have been the normative level of compassionate responding).

Table 2. *Observed and expected frequencies for helping behavior across conditions* (Lim, Condon, & DeSteno, 2015).

Outcome	Meditation (Headspace)		Active Control (Lumosity)	
	Observed	Expected	Observed	Expected
Helped	10	6.75	4	7.25
Did not Help	17	20.75	25	21.75

Note. $\chi^2(1)=4.03$, $p<.05$

These findings are notable for several reasons. First, they serve as a robust replication of our earlier findings demonstrating that brief engagement in mindfulness meditation enhances compassionate behavior (Condon et al., 2013). These findings also point to the potential scalability of meditation as a technique for building a more compassionate society. As is clearly evident, many individuals do not have the luxury of time or accessibility to regularly attend meditation training sessions with certified instructors. The ability to access such expert guidance using web- and mobile-based technology at little cost would greatly facilitate engagement in contemplative practice among any interested individuals. Moreover, the potential for the rapid spread of prosocial behavior would be strengthened not only by the increased numbers of individuals demonstrating increased compassionate motivations, but also by a "pay-it-forward" effect among recipients of their kindness. As our past work has shown, grateful beneficiaries of aid evidence a marked increase in their likelihood to subsequently extend help to others, even if

these others are complete strangers (Bartlett & DeSteno, 2006; DeSteno, Bartlett, Baumann, Williams, & Dickens, 2010).

Enhancing compassion through subtle situational cues. Social psychologists have investigated a variety of non-meditation based techniques that may also prove effective for enhancing compassion. In particular, manipulations of subtle situational cues within an environment can alter the likelihood that an onlooker comes to the aid of another person in need. Experimental research indicates that increases in feelings of similarity (Valdesolo & Desteno, 2011) and security (Mikulincer, Shaver, Gillath, & Nitzberg, 2005) enhance compassion and helping behavior. In both lines of research, subtle cues were sufficient to increase feelings of compassion and downstream helping behavior. In work from our laboratory, a simple manipulation of motor synchrony resulted in magnified feelings of similarity to a stranger, which subsequently mediated the experience of compassion for the stranger's plight and behaviors meant to assist him (Valdesolo & DeSteno, 2011). Mikulincer and colleagues (also see chapter by Mikulincer and colleagues, this volume) likewise demonstrated that subtle manipulations of felt security increased compassionate responding to the others' suffering (Mikulincer et al., 2005). Participants in these studies viewed subliminal primes of the names of secure attachment figures (e.g., the name a person who has provided care and responsiveness in times of need, such as the participant's mother, a close friend or other relationship partner) and later reported greater willingness to help a woman in need, compared with participants who viewed subliminal primes of neutral content.

Interventions that incorporate these factors may stand as potential targets for interventions that do not involve meditation-based training. It is interesting to note a potential common element that may tie some of these relatively nascent findings together. The goal of

many meditative techniques is to foster a state of equanimity – a state in which the social

categories typically used to separate people are broken down (Desbordes et al., 2015). Such a

state, by definition, increases the similarity seen between individuals. In turn, the ability of subtle

similarity manipulation to increase compassion may represent an efficient mechanism to achieve

similar benefits that come from more chronic training of the mind. This view is supported by

work showing that inductions of compassion enhance feelings of similarity to others (Oveis,

Horberg, & Keltner, 2010), thereby suggesting a possible reciprocal interaction between the

relevant mechanisms. A sense of increased similarity to another individual, of course, stands as a

marker that this individual is likely to be more willing to repay the favor by providing

subsequent aid in the future (de Waal, 2008). Importantly, increasing a sense of similarity and

oneness appears to represent a viable route to extending compassion and interpersonal harmony

beyond one's in-group (Dovidio et al., 1997; Dovidio, Gaertner, & Kawakami, 2003). For

example, Dovidio and colleagues found that the bias to help in-group members more than out-

group members could be reduced by leading participants to recategorize two groups as one.

Moreover, initial evidence has demonstrated the ability of meditation practices to alter

categorization and implicit attitudes toward different social groups (Kang et al., 2014; Lueke &

Gibson, 2015).

Questions and criticisms

We believe three major questions mark the agenda for future research on factors that

enhance compassion. First, as the field matures, it will be important to examine possible

contextual factors that predict the degree to which meditation increases compassionate outcomes

(e.g., social context, practice settings). The next wave of investigation should aim toward

understanding the exact mechanisms associated with mindfulness- and compassion-based

training that may underlie their enhancement of prosocial behavior. Second, researchers should prioritize investigations of individual susceptibility to compassion-based enhancements via meditation training. Finally, we believe it fruitful to investigate meditation practice and situational cues as factors that can help overcome "compassion fatigue" (see Figley and Figley, this volume) and the collapse of compassion in which people are more likely to help a smaller number of victims compared with larger groups (cf. Cameron & Payne, 2011). We discuss each in turn.

Our research demonstrated that mindfulness- and compassion-based meditation increases the likelihood of prosocial responding. Of particular interest for future work is the possibility that mindfulness and compassion-based meditation might increase compassionate outcomes via different mechanisms. Whereas compassion meditation might increase compassionate behaviors through empathic processes and prosocial emotion, mindfulness-meditation might increase compassionate behaviors through a number of plausible mechanisms, including increased attention to all stimuli (MacLean et al., 2010), a reduction of self-related affective biases (Hölzel, Lazar, et al., 2011; Vago & Silbersweig, 2012) or via increases in executive functioning (Sahdra et al., 2011). Future work should prioritize examination of practice-specific mediators of enhanced compassionate behavior. Such investigations will aid in determining whether different practices are more or less effective for promoting compassionate outcomes for specific populations.

The second question for future research centers on integrating social psychological and personality psychology approaches to compassion and prosocial behavior. From one perspective, situational forces (e.g., feelings of similiarity or security) can modulate compassion. From a second perspective, chronic dispositions (e.g., dispositional compassion) can modulate

experiences of compassion. These competing perspectives parallel a long-running debate between social and personality psychologists regarding the predictively validity of personality traits or dispositions since the late 1960s. Whereas social psychologists favored explanations that attributed human behavior to situational forces, personality psychologists argued that dispositions or traits explained behavior. Walter Mischel (1968) wrote a landmark book that critiqued the trait approach, arguing that traits only account of a limited amount of variance in behavior. Although the two fields were marked by division since that time, most personality and social psychologists generally take an *interactionist* perspective in which personality factors and situations interact to produce behavior (Donnellan, Lucas, & Fleeson, 2009).

Research on compassion and prosocial behavior appears to coincide with the interactionist perspective: situations impact compassionate responding to the needs of others, but contextual variables and differences between people can impact compassionate behavior meant to reduce the suffering of others. In this vein, our laboratory has demonstrated that greater severity of past adversity predicts higher levels of empathic processes and dispositional compassion. Moreover, these chronic variables predicted the intensity of affective states of compassion and subsequent action meant to aid those in need when exposed to another's suffering (Lim & DeSteno, 2016). Thus, compassionate states drive prosocial action, but its emergence can be a function of the interaction between situational and chronic variables. We encourage investigators to take an interactionist approach in future work.

Finally, an unresolved puzzle in this area of inquiry concerns the degree to which compassion is sustainable. Many scholars have described the tendency to experience "compassion fatigue" through which repeated instances of caregiving can give rise to empathic distress (e.g., Figley, 2002; see Figley & Figley, this volume; see also Klimecki & Singer, 2012).

In a similar vein, Cameron and colleagues (see Cameron, this volume; Cameron & Payne, 2011) have demonstrated that people down-regulate experiences of compassion when they anticipate a request for help from a large number of people, compared with a smaller number. In a similar vein, people are more likely to care and provide help for a specific, identified individual compared with a large group of unidentified victims (Jenni & Loewenstein, 1997; Small & Loewenstein, 2003). Although speculative, the present review suggests that meditation-based practices may provide a viable route to overcome these barriers to large-scale and sustainable compassion. Indeed, as our colleagues in this volume have demonstrated, contemplative practices have been shown to increase the ability to experience compassionate mental states, rather than empathic distress, when presented with another's suffering (e.g., Klimecki, Leiberg, Ricard, & Singer, 2014). It remains to be investigated whether such training would prevent burnout in contexts that require long-term care or toward a large number of people in need. Although humans are susceptible to situational forces that lead to the ignorance of others' suffering, humans are also readily amenable to situational forces that tip the scales in favor of compassionate responding. Moreover, such behaviors can be increased through simple, readily available exercises such as mindfulness- and compassion-based meditation. The doors are open for future investigations to build on this work toward a more compassionate society.

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