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Teaching empathic concern and altruism in the smartphone age

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ABSTRACT
Numerous studies show empathic concern promotes altruistic motivation and prosocial behavior. Here, we discuss empathic concern, its relation to altruistic motivation, and how empathic concern is invoked in experimental studies. We do this with an eye toward applying laboratory techniques in the classroom, and everyday life, to foster empathic concern and altruistic responding. This goes beyond teaching about empathic concern to setting up conditions that help people experience this psychological state, and its benefits, firsthand. Smartphone-based ecological momentary interventions (EMIs) can help us do this by raising self- and other-awareness, and by promoting empathic states and practices in daily life. While smartphones often pull us away from direct personal interaction, we explore ways of using these devices to redirect our attention to those around us. We end by suggesting that these ways of helping people regularly experience and act upon empathic concern in daily life might help nurture a compassionate disposition.

1. Introduction
Empathy refers to various ways of being oriented and responsive to the thoughts, actions, feelings, and experiences of others (Batson, 2011\textsuperscript{a}; Coplan & Goldie, 2014; Decety, 2012; Ickes, 2011; Matravers, 2014; Prinz, 2014; Stephan & Finlay, 1999; Vetlesen, 1994, 2005; see Table 1). Each of these responses can be expressed independently or together, and each influences interpersonal and societal relations (Batson & Ahmad, 2009; cf. Davis, 1983; Decety & Cowell, 2014; Nussbaum, 2013; Shamay-Tsoory, Aharon-Peretz, & Perry, 2009; Vetlesen, 1994, 2005). For example, an empathic doctor may notice a patient’s suffering, understand the patient’s thoughts and feelings, and respond with sensitivity and care. Alternatively, the doctor may exhibit only one or two of these responses.

Empathic responses may be cognitive—for example, recognizing the mental states, emotions, or actions of others—or may involve both cognition and affect. Some of these
responses facilitate prosocial and moral behavior (cf. Batson 1991; Warden & Mackinnon, 2003; Findlay et al. 2006; Decety & Cowell, 2014; cf. Ickes, 2011); and, in educational-settings, empathy has been associated with growth and achievement (Feshbach & Feshbach, 1987, 2011). However, among the various types of empathy, empathic concern—an affective, sensitive and compassionate response (cf. Batson, 2011a; Winczewski, Bowen, & Collins, 2016)—is distinct in the extent to which it promotes altruistic motivation for those who are in need (Batson, 2011a). More specifically, empathic concern is an other-oriented emotion evoked by perceiving someone in need (Batson, 2011b), which promotes the motivation to increase this person’s welfare (Batson et al., 2003; Batson, 2011a; Winczewski et al., 2016).

Several recent events illustrate the altruistic significance of empathic concern. On July 17, 2014, New York City police officers approached Eric Garner for selling loose cigarettes. When the officers tried to handcuff the 43-year-old African American, he tried to pull away. One officer threw a chokehold around Garner’s neck, while the others pinned him down. Garner said ‘I can’t breathe’ 13 times. Shortly after the incident, Garner was pronounced dead. On August 1 the city medical examiner classified the death a homicide, having determined that Garner died as a result of the chokehold and compression of his chest (Goldstein & Santora 2014). The officers in the Garner case might have responded in any number of ways. What if they had responded with concern for Garner’s health? What if they had taken his perspective—even for a few seconds—into account?

Similarly, what if Baltimore police officers had responded with empathic concern on April 12, 2015 when they realized that Freddie Gray’s handcuffed body had been rolling around the back of a police transport van, when they heard him ask for a medic, or when they found him unresponsive (Graham 2015)? Because empathic concern increases the likelihood of altruistic motivation and helping behavior, Garner and Gray would have had a better chance of living had the officers involved felt empathic concern for them.

These examples serve to underscore the prosocial potential of empathic concern being more widespread. As behavioral science professors, these implications have led us to examine the literature on empathic concern, and ask how it might be developed in and out of the classroom. In what follows, we discuss empathic concern in greater detail, its relation to altruistic motivation, and techniques for invoking empathic concern, which are widely used in experimental studies (Sections 2 and 3). In doing so, we discuss why empathic concern should not be thought of as antithetical to critical reflection, as some suggest. We

| Table 1. A partial list of types of empathy (adapted from Batson, 2011b). |
| Types of Empathy |
| 1. Cognitive: understanding the mental states, emotions and actions of others |
| 1a. Knowing another person’s thoughts, feelings or mental states (e.g., empathic accuracy) |
| 1b. Adopting the expressions or postures of another (e.g., mimicry, facial empathy) |
| 2. Cognitive & Emotional: being emotionally responsive to others |
| 2a. Feeling what another feels (e.g., emotional contagion) |
| 2b. Projecting or imagining being another person (e.g., Einfühlung—usually attempted for artistic purposes in the way an author might imagine the way a psychopath thinks) |
| 2c. Intuiting or imagining the thoughts and feelings of another (e.g., imagine-other, or other-oriented perspective taking) |
| 2d. Imagining being in another’s situation (e.g., imagine-self, or self-oriented perspective taking) |
| 2e. Being in distress as a result of seeing another suffer (e.g., empathic distress) |
| 2f. Sympathetic feeling, or caring, for another who is suffering (e.g., empathic concern) |
then discuss ways we have begun to apply laboratory techniques in the classroom, and in everyday life, to cultivate empathic concern and altruistic responding (Sections 4 and 5).

What we present here goes beyond teaching about empathic concern to setting up conditions that help people experience this state and its benefits firsthand. While the classroom provides a good starting point, empathic concern also needs cultivating ‘in the wild.’ Smartphone-based ecological momentary interventions (EMIs) can help us do this by raising self- and other-awareness, as well as by promoting empathic states and practices in everyday life—where they can have real world impact. Thus, while smartphones can pull us away from direct personal interaction, we discuss ways these devices might be used to redirect us back toward those around us. We end by suggesting that regularly experiencing and acting upon empathic concern in our daily lives may nurture a compassionate disposition (Section 6).

### 2. Empathic concern and altruistic motivation

Empathic concern is a constellation of emotions—sympathy, compassion, tenderness, and soft-heartedness—felt for another in need. The key word is ‘for’. Empathic concern is not feeling with a person (although sharing another’s feelings can promote empathic concern); nor is it being distressed by a person (as when a baby’s crying distresses a caregiver), or sharing the distress of another (as in emotion matching or catching). Rather, empathic concern involves warm emotional responses such as sympathy and compassion, often accompanied by sadness and distress, for another person. These emotions are elicited by, and oriented toward, the perceived needs of another person. One experiences empathic concern for another because this person’s well-being seems threatened (Batson, 2011a).

Much of what we know about empathic concern stems from the work of Daniel Batson. Experimental studies performed by Batson and his colleagues have repeatedly shown that certain activities and situations can produce empathic concern for individuals and for the groups with whom they are categorized (Batson, 2011a). In one experiment, Batson and his colleagues found positive empathic feelings induced for a convicted murderer were felt for convicted murderers in general (Batson et al., 1997). In another experiment, Batson and his team found empathic concern for a heroin addict carried over to heroin addicts as a whole, and increased helping behavior. Results like these illustrate empathic concern’s ability to increase responsiveness towards people in need—including stigmatized groups (Batson, Chang, Orr, & Rowland, 2002) and populations that fall outside one’s usual ‘circle of concern’ (cf. Nussbaum, 2013).

As numerous studies indicate, empathic concern is desirable because it increases the likelihood of having altruistic motivation; that is, of being motivated to increase the ‘welfare of the person for whom empathy is felt’ (Batson, 2011a; p. 20) by removing the empathy-evoking need (Batson, 2011a, p. 59; Coke, Batson, & McDavis, 1978; Fultz, Batson, Fortenbach, McCarthy, & Varney, 1986; Dovidio, Allen, & Schroeder, 1990; Cialdini, Brown, Lewis, Luce, & Neuberg, 1997). For example, it has been observed that interpersonal responsiveness in dyadic interactions is increased by empathic accuracy and empathic concern, but not by empathic accuracy alone (Winczewska et al., 2016).

Compared to egoistic motivation (i.e., the desire to ultimately further one’s own welfare), empathy-induced altruistic motivation is more likely to lead to helping behavior, more consistent help, and increased sensitivity to the needs of others (Batson, 2011a).
study, it was found that empathic concern, but not personal distress (an egoistic form of empathy), motivated costly altruism involving self-sacrifice. This relationship was supported by neural activity in brain regions associated with social attachment and caregiving (ventral tegmental areas, caudate and subgenual anterior cingulate; FeldmanHall, Dalgleish, Evans, & Mobbs, 2015).

Of course, it should not be assumed that empathic concern is an unqualified good. Under certain conditions it can lead people to transgress standards of fairness or assume a paternalistic posture (Batson, 2014). However, transgressing standards of fairness would seem to result when empathic concern is experienced for some (e.g., those like us, those we find attractive) but not others. In this case, the solution would seem to be to cultivate an empathic concern that extends more broadly and overrides personal biases—not reducing empathy, as some might suggest (e.g., Bloom, 2014; Tierney, 2016). To return to our earlier example, if some police are less likely to respond with empathic concern to African American males than Caucasian males, the prescription would not be to reduce empathic concern, but to extend its reach.

Further, we should not assume, as Bloom (2014) recently has, that empathy, in general, has a tendency to decrease reflectiveness. There is no empirical evidence to support the view that empathic concern cannot inform, or be informed by, reason. Among medical students, rather than being inversely associated with academic performance, empathy has been associated with academic performance and medical education competencies (e.g., Arora et al., 2010; Austin, Evans, Goldwater, & Potter, 2005). Empathy has also been linked to academic achievement among elementary school students (Feshbach & Feshbach, 1987). Additionally, empathic concern has been associated with executive functioning and social reasoning abilities (e.g., Eslinger, Moore, Anderson, & Grossman, 2011). There, thus, seems no basis for theorizing that empathic concern and social reasoning abilities cannot be cultivated together. Conversely, the cultivation of these abilities together would better enable us to recognize and correct tendencies that hinder us from acting in the best interests of some—including tendencies to transgress standards of fairness or take paternalistic postures. In recognizing the importance of cultivating a reflective compassion, Martin Luther King Jr. observes: ‘True compassion is more than flinging a coin to a beggar; it is not haphazard and superficial. It comes to see that an edifice which produces beggars needs restructuring’ (King, 1967).

To be clear, empathic concern simply promotes altruistic motivation. It does not necessarily lead to altruistic behavior, nor necessarily extinguish egoistic motivation (Decety & Cowell, 2014). Our motivations are often complex and our behavior is regularly shaped by multiple motivations. Some of these can be altruistic, even when we try to follow through at minimal cost to ourselves. A teacher who feels an altruistic impulse to assist a teary-eyed student in the hall might attempt to help as quickly as possible out of both an altruistic motive to help the student and an egoistic motive to go home and relax (cf. Batson, 2011b). Additionally, empathic concern may be invoked and one still opt to solely further one’s own welfare. Despite having an empathic impulse, a teacher might avert his gaze from a teary-eyed student and walk quickly by so he can get home. Nonetheless, as already observed, empathic concern increases the likelihood of having the motivation to address a need. And this motivation is altruistic because it is aimed at helping another person, not oneself. However, since altruism and egoism are distinguished by different aims (and not by the
consequences of pursuing these aims), and because multiple aims can be simultaneously pursued, altruism does not require self-sacrifice (e.g., Batson, 2011a; but see Monroe, 1996).

3. Inducing empathic concern in the lab

In experimental studies, perspective-taking is regularly used to elicit empathic concern and altruistic motivation (Batson, 2011a; Feshbach, 1984; Pecukonis, 1990; Feshbach & Konrad 2001). Participants are often asked to project themselves into another’s situation and to imagine what that person is feeling and thinking. In this form of perspective-taking—called other-oriented perspective-taking—a person imagines not what they would feel or think in a certain situation, but what another person might be thinking, feeling or experiencing. This is different than self-oriented perspective-taking, where participants are asked to imagine what an experience would be like for them—how they would feel or think in a certain situation (cf. Batson, 2011a). In self-oriented perspective-taking, people project themselves into a situation and ask how they would feel if they were in someone else's shoes.

There are important differences between self- and other-oriented perspective-taking. Self-oriented methods often lead to more discrepancies between one's thoughts and feelings and those actually experienced by another person (Coplan, 2014). Perhaps George Bernard Shaw had this tendency in mind when he advised: ‘Do not do unto others as you would that they should do unto you. Their tastes may not be the same’ (Shaw, 1903/1955, p. 257). Self-oriented perspective taking is also more likely to lead to a preoccupation with one's own thoughts and feelings, which can push one into a state of distress. Nevertheless, self-oriented perspective-taking can be a stepping-stone toward empathic concern (Batson, 2011a). But for the reasons just mentioned, using this method requires more caution than other-oriented perspective-taking.

Batson’s work indicates that empathic concern involves not just being aware of another’s needs, but also valuing another and their well-being (e.g., Batson et al. 2007; Batson, 2011a); and, as Batson observes, ‘most people place at least a moderate value on the welfare of others’ (2011a, p. 44). What methods of invoking empathic concern (e.g., perspective-taking) often do, then, is better enable the value we place on other human beings, and their well-being, to inform our states and behavior (Batson, 2011a). To illustrate, several years ago, I (BF) found myself crying for a toddler in our neighborhood who frequently spent the night at our house due to poor living conditions. My tears for Tommy reflected how much I had come to love him and want the best for him. My feelings of sympathy and tenderness for Tommy helped me realize that I had come to see him more like a son than a neighborhood boy.

While perspective-taking promotes empathic concern, having people take an ‘objective stance’ toward others, and their stories, can suppress empathic concern (e.g., see Batson, Early, & Salvarani, 1997). This is done by asking participants to stay ‘objective and detached,’ and ‘not get caught up’ in how a person feels (e.g., see Batson, Early, & Salvarani, 1997). Here, the idea is to suppress the value one places on others and their experience. So, on the one hand, perspective-taking tends to open the door toward empathic concern by helping us notice the humanity of others, prompting us to act on the value we place on other people. On the other hand, asking people to stay detached is more of an invitation to shut the door on empathic concern, thereby reducing the probability of an altruistic response.
4. Empathic concern in the classroom

Techniques for evoking empathic concern, such as perspective-taking, have been widely tested and validated in experimental studies. Here, we discuss how these techniques can be adapted and used in the classroom. Over the past several years, we have begun to use these techniques to enrich class discussions of empathy and how to promote healthy intergroup relations. Instead of simply learning about empathy, students can experience empathy firsthand—so they might learn from it. Further, instead of simply learning about empathy-induced altruism, students might learn how to increase the prevalence of this response in their own lives and experience its benefits firsthand.

4.1. Perspective-taking classroom exercises

One way to evoke empathic concern in the classroom is through perspective-taking exercises where students engage with another's story (cf. Feshbach & Feshbach, 2011). This story might come in the form of fiction, an editorial, a case study, news article, memoir, biography, film or YouTube clip. Differences between self- and other-oriented perspective-taking might be explained before asking students to try both techniques with a character in the story.

To illustrate, take the film *Invictus* (Eastwood et al., 2009). Students are asked to imagine the perspective of Nelson Mandela’s head bodyguard, Jason, who—being black—is conflicted about working with white bodyguards—Afrikaners who used to work for the pro-apartheid regime. Here is an example of a question that might help students practice other-oriented perspective-taking:

While you are watching *Invictus*, try to imagine what Mandela’s head bodyguard, Jason, is experiencing. What is he thinking and feeling? Try to imagine how Jason feels.

To invite self-oriented perspective-taking, the question can be changed:

While you are watching *Invictus*, try to imagine how you yourself would feel if you were in Jason’s place (Mandela’s head bodyguard). What would you be experiencing? Try to imagine how you would feel.

After giving students a chance to engage in both forms of perspective-taking, students can be asked to compare and contrast what they discovered and felt, and how this motivated them. Students might also be asked to discuss how their experience compares with research findings on self- and other-oriented perspective-taking, before discussing how perspective-taking on a regular basis might influence the way they respond to others in everyday interactions.

4.2. Nonviolent Communication in the classroom

Another method that can be used to facilitate perspective-taking, and thereby empathic concern, is Nonviolent Communication (NVC) (Rosenberg, 2003). NVC is a communication modality taught and practiced throughout much of the world, based on the work of Marshall Rosenberg (2003). Instead of analyzing, blaming, or judging people, NVC trains people to listen for needs—theirs and others. The premise is that primary human needs are universal, and that almost every action we take is rooted in an attempt to meet one or more needs. The NVC modality uses a four-step process—observations, feelings, needs, and requests (see Table 2)—to help people interact empathically. But it can also be used when one is alone to shift oneself into an empathic state. These steps, in whole or part, can be
used to empathically give and receive information in a way that avoids defeating relational dynamics triggered by blaming others.

NVC can be used to help students think about and discuss the needs of people whose experiences are markedly different than their own. By focusing on the needs of another—and not the strategies the person is using to meet those needs—the humanity of the other person can start to overcome one’s preconceived judgments, indifference, and detached analyses. This facilitates seeing the person as a human who has the same primary needs one has.

Although NVC has not been widely used in experimental studies, it does involve perspective-taking, which, as we have already seen, is reliably used to evoke empathic concern. Further, having teachers and students engage in activities designed to improve their ability to understand the situations of others and effectively communicate this understanding—techniques similar to those used in NVC—are effective tools for promoting empathy (Feshbach & Feshbach, 2011). These techniques are rooted in psychological models of empathy that—like NVC—are centered on identifying emotions, understanding others, and communicating that understanding (cf. Feshbach, 1984). These models, along with NVC, align with evidence that empathic concern is rooted in perceiving the needs of another person and valuing that person (Batson et al. 2007). In this case, NVC is a way of reducing barriers that interfere with perspective-taking and empathic concern when another’s perceived ‘foreignness’ makes it difficult to see their needs and full humanity.

### 5. Empathic concern in everyday life

In addition to using empathy-related exercises in the classroom, ‘ecological momentary assessment and intervention’ (EMA/I) offers a way for students to integrate empathy-related exercises into daily life. EMA is an assessment technique which involves repeatedly asking questions in the moments and contexts of everyday life. This technique has many advantages over more traditional one-time assessments. In short, it increases ecological validity, decreases recall bias, and enables the measurement of variability and change over a short timespan (i.e., microprocesses; e.g., Mehl & Connor, 2012). EMI is a way of helping people make positive changes by prompting them to engage in practices or activities repeatedly within the context of daily life—and multiple lines of study indicate that context matters when learning or developing stable habits (e.g., Gawronski & Cesario, 2013; Rydell & Gawronski, 2009; Wood & Neal, 2009). As a result of repeatedly doing things in certain contexts, those contexts can act as ‘occasion-setters’ by making those responses more likely (e.g., Thoenissen et al. 2002; Toni et al. 2002; Praamstra et al. 2009; Moisa et al. 2012).

EMA/I has been a growing area of innovation in psychology since the 1980s (e.g., Larson & Csikszentmihalyi, 1983). Over this span, it has contributed to advancements in multiple fields (e.g., Heron & Smyth 2010; Shiffman, Stone, & Hufford, 2008). Further, with the integration of smartphones into daily life (Pew Research Center, 2015) and advancements

<table>
<thead>
<tr>
<th>Step</th>
<th>Examples (only one side of dialogue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>When I started talking about politics, I noticed you shook your head and left the room</td>
</tr>
<tr>
<td>Feelings</td>
<td>Are you frustrated when I express my political views?</td>
</tr>
<tr>
<td>Needs</td>
<td>I wonder if you’re wanting more peace and harmony and if my views seem to be getting in the way</td>
</tr>
<tr>
<td>Requests</td>
<td>Would you be willing to give me your perspective?</td>
</tr>
</tbody>
</table>

Table 2. The four steps of nonviolent communication.
in EMA/I-related technology (e.g., Miller 2012), EMA/I has become more feasible and widespread. It is, thus, becoming more feasible to use EMA/I to extend educational exercises and assessments (e.g., Steenbergh, Daugherty, Devers, Runyan, & Fry, 2016).

EMA/I provides a way for empathy-related exercises to carry over from class into daily life, where their real world impact can be experienced. While the integration of mobile devices into daily life may be pulling us away from direct interpersonal interaction (e.g., Konrath, O’Brien & Hsing 2011; Turkle 2015), these devices might also be used to reorient us back toward those around us when used for that purpose. With this in mind, the development of flexible and user-friendly mobile app-based EMA/I systems offer a way to distribute EMA/I empathy-related exercises to students. Via free mobile apps, notifications can be delivered to students at various points throughout the day in the same way text messages are delivered. Responding to these notifications takes students to in-the-moment prompts and exercises (see Figure 1(a)). In this way, as we discuss next, EMA/I provides a way of integrating empathy-related practices into daily life.

5.1. Practicing perspective-taking

In addition to having students practice perspective-taking in class (see Section 4.1), EMA/I can help students practice this technique outside class. One way of doing this is by adapting vignette-based perspective-taking techniques used in empathy studies (e.g., Batson, 2011a). This can be done by sending daily notifications that ask students to read a brief vignette, and take the perspective of a person in the story. Another approach is to prompt students to

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**Figure 1.** (a) Screen display for an example notification banner; and (b) An awareness-raising prompt. (Screenshots show notifications and views within the LifeData mobile app; Lifedata, LLC ©2015).
identify someone they have been around that day who is going through a difficult situation. Students might then be given a series of prompts that walk them through other-oriented perspective-taking for that person, before having them reflect on their level of empathic concern for them. This approach would be an adaptation of forms of compassion training which have been shown to increase empathic concern and prosocial behavior (e.g., Klimecki, Leiberg, Lamm, & Singer, 2013; Jazaieri et al., 2015).

5.2. Attention to empathic concern

EMA/I might also be used to simply raise students’ awareness of the needs of others around them, and of their own affective responses. Raising self-awareness has been shown to promote positive change when one is motivated to change and capable of changing (cf. Runyan et al., 2013; Shiffman et al., 2008). Raising self-awareness also provides opportunities for self-regulation, which is associated with sympathy and empathic responding (e.g., Eisenberg & Eggum, 2009; Eisenberg et al., 1996; Valiente et al., 2004). Further, paying attention to and meditating on one’s compassionate affective responses has been shown to increase empathic concern (e.g., Klimecki et al., 2013). With this in mind, to help students become aware of the needs around them, and of their own empathic responding, EMA/I can be used to ask students throughout the day whether they have recently come across someone in need (see Figure 1(b)), and the degree to which they felt compassion for them.

5.3. Empathic accuracy exercises

EMA/I can also be used to help students practice empathic accuracy, which—while not sufficient for empathic concern or altruistic motivation—can mediate responsiveness to others when empathic concern is high (Winczewski et al., 2016). One way to have students practice empathic accuracy throughout the day is to prompt them to play an online emotion recognition game, such as the one from The Greater Good website hosted by researchers at University of California, Berkley (greatergood.berkeley.edu). In this game, participants are asked to examine a picture of a person expressing an emotion (see Figure 2(a)). They are then asked to identify the emotion the person is expressing (Figure 2(b)). After this, they are told whether they got it right, and shown indicators of the emotional facial expression (see Figure 2(c)).

5.4. Prompting altruistic behavior in daily life

Finally, EMA/I can be used to help students begin thinking about, and planning how, they might realistically care for people they see in need. The idea is to provide opportunities for students to act upon empathically-induced altruistic motivations. With this aim, at random times throughout the day, students can be sent messages prompting them to engage in other-oriented perspective-taking after having been with someone going through a tough time (see Figure 3(a)–(b)). They can then be asked why it is important to help this person (see Figure 3(c)), and to list some things they can do to help (see Figure 3(d)). Then, over the next few days, they might be sent a couple of notifications prompting them to do something on their list.
5.5. Preliminary experience with an empathic concern EMI

Over the past year, we have begun using EMI to promote empathic concern and altruism among our students. For a three-week period, we have students download and use an EMA/I mobile app which enables them to engage in the empathy-related exercises discussed above (see Sections 5.1–4). While other systems might be used, we have used the LifeData EMA/I system. This system is easy-to-use and our students have found the mobile app intuitive. One limitation is that not all our students have smartphones. That being said, last year we had 194 students participate in our empathic concern EMI and only about five did not have an iPhone or Android. We purchased several iTouch devices for around $150 each, which we lent to these students. This, however, is becoming less of an issue as smartphones become more ubiquitous.

Another consideration is engagement. On average, we have found that students engage with about 70% of our prompts—though often a handful of students hardly engage at all. To increase engagement, we:

- **Limit the number of interactions.** We never send more than two or three notifications in a day, and we schedule days off (see Table 3).
- **Limit the number of prompts/questions per notification.** The number of prompts per notification can vary with number of notifications and question demand, but we try to keep this number under eight items.
- **Increase variety.** As outlined in Table 3, we vary the timing of notifications, the number of notifications per day, and the exercises. Also, the exercises build from week to week.
Figure 3. Prompting empathically-induced altruistic action. (a, b) Students might be asked to engage in other-oriented perspective-taking after having been with someone going through a tough time; (c) They might then be asked to assess why it is important to help; and (d) They might be asked to think of what they might do to help.
Gamify interactions. We intersperse the emotion recognition game to add an element of fun.

Provide incentives. We often provide either monetary incentive or class credit, both of which have worked well overall. An initial incentive can help individuals start something they will eventually come to find rewarding.

While these strategies align with the literature on EMI (cf. Heron & Smyth 2010), we plan to improve engagement by making changes as we learn more. Nevertheless, our students have—in general—found the empathic concern EMI engaging and beneficial. Further, our preliminary findings suggest it does enhance in-class empathic concern techniques (Runyan & Fry, in progress).

6. Conclusion: Toward a compassionate disposition

By inviting students to engage in practices which promote empathic concern and altruism, EMA/I encourages them to incorporate these practices into their daily lives. Advancements in smartphone technology, and its widespread adoption, have made this technique more practical. There are, however, several limitations that require further exploration. These include questions concerning how to foster high-levels of motivation and engagement; which parameters and conditions promote positive change; and whether certain individuals are more likely to engage and benefit from smartphone-based EMA/I. Another limitation is that certain populations and subpopulations continue to have limited access to, or have otherwise been slower to adopt, smartphone technology—though this number is shrinking.

Despite these limitations, smartphone-based empathic concern EMA/I provides a way to prompt students to practice:

1. self-regulation
2. identifying and understanding the experiences and needs of others
3. paying attention to, and meditating on, their compassionate affective responses to others, and
4. being behaviorally responsive to the needs of others

across the varying contexts of daily life. Each of these skills is associated with empathic concern and/or altruistic behavior. Thus, cultivating each as a daily habit may help nurture a compassionate disposition whereby one has the tendency to see the needs of others and respond not only with empathic concern, but also with sensitive and effective help. We suggest that this disposition, when cultivated along with habits of reasoning and reflection, makes it more likely for the value of others to figure more prominently in the way we live.

<table>
<thead>
<tr>
<th>Table 3. An example empathic concern EMI.</th>
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<tbody>
<tr>
<td># of notifications</td>
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<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Perspective-taking (see Section 5.1)</td>
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<tr>
<td>Attention to empathic concern (see Section 5.2)</td>
</tr>
<tr>
<td>Emotion recognition game (see Section 5.3)</td>
</tr>
<tr>
<td>Prompting plans to help (see Section 5.4)</td>
</tr>
</tbody>
</table>

# of notifications:
- 3 per day, 2 per day, 2 per day,
- 10 prompts each, 5–10 prompts each, 5–10 prompts each.
More than delivering practices for the cultivation of empathic concern within daily life, EMA/I provides a way of assessing the effectiveness of these practices in promoting dispositional development, and the theories upon which these practices are based. Further, EMA/I holds promise for developing both effective practices and assessments for other dispositional outcomes. Empathy is just a start.

Notes
1. Multiple smartphone-based EMA systems exist, including MoviesensXS, Ilumivu, MetricWire and LifeData. For our illustrations here, we use LifeData.
2. Text messaging systems might also be used to deliver some of the practices we have outlined here.

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