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Empathy is hard work: People choose to avoid empathy because of its cognitive costs

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Abstract

Empathy is considered a virtue, yet fails in many situations, leading to a basic question about human prosociality: when given a choice, do people prefer to avoid empathy, and why? Although much work has focused on material and emotional costs of empathy, here we examine whether people experience empathy as having inherent cognitive effort costs, shaping choices to engage in or avoid empathy. We develop a new measure of empathy regulation called the Empathy Selection Task, which uses people's free choices to assess motivation to empathize with others. In this task, participants make a series of binary choices, selecting into situations that lead them to engage in empathy or an alternative course of action. Across 10 studies (N=1,017), we found a strong and replicable preference to avoid empathy, which was associated with perceptions of empathy as effortful, aversive, and inefficacious. Experimentally increasing perceived efficacy at empathy eliminated empathy avoidance, suggesting that cognitive costs directly shape empathy choice. Critically, empathy avoidance was not reducible to avoidance of material or emotional costs, as effects emerged for targets displaying positive affect and with no helping demands implied. These results are the first to show that subjective cognitive costs shape active choices to empathize with others. Considering empathy as determined by effort-based choices can usefully advance theory and method in the study of human morality, and inform debates over intuitive prosociality and the limits of empathy. When given the choice to share in others' feelings, people act as if it's not worth the effort.

One of the fundamental skills for navigating everyday life is empathy: the ability to take others' perspectives, share others' experiences, and feel motivated to help (Decety & Cowell, 2014). Empathy can be advantageous, as it prompts us to aid those who share our genes and cooperate reciprocally with others to mutual benefit (Preston, 2013). Yet empathy may entail cognitive, emotional, and material costs. Investigations into the promise and perils of empathy has thrived, with much research across disciplines—including biology (Sober & Wilson, 2008), economics (Singer & Fehr, 2005), neuroscience (Decety, 2011; Decety et al., 2016), philosophy (Prinz, 2011), and psychology (Batson, 2011; Bloom, 2017)—attempting to understand when and why people experience empathy. We know that empathy is important, but less about what prevents people from feeling it. Here, we used an interdisciplinary approach to address an overlooked question: to what extent do people *choose* to feel empathy; and why do people have these preferences? We suggest that on average, people prefer to avoid empathy—as measured via their tendency to exert situational control over its elicitation—and that this preference is driven by judgments about the *cognitive* costs inherent to empathizing.

Empathy is clearly a motivated phenomenon: changing people's motivations to empathize can shape empathic outcomes (Cameron, Inzlicht, & Cunningham, 2017; Keysers & Gazzola, 2014; Zaki, 2014). People empathize in part based upon how they weigh expected values of different costs against offsetting rewards. Most previous work has focused on obvious deterrents to empathy, such as material costs of helping (e.g., money, time) and vicarious negative affect. For example, people avoid empathy-eliciting situations when they believe empathy will entail material costs (Andreoni, Rao, & Trachtman, 2011; Pancer et al., 1979; Shaw, Batson, & Todd, 1994), and manipulations of material costs influence how much empathy people have for mass suffering (Cameron & Payne, 2011). Similarly, people avoid empathy-eliciting situations when empathy entails vicarious emotional costs such as distress (Batson et al., 1983; Davis et al., 1999), and manipulations of emotional costs influence whether people dehumanize out-groups (Cameron, Harris, & Payne, 2016). Although empathy can facilitate social relationships and signal trustworthiness (Barasch et al., 2014), material and emotional costs of empathy, and risks of being exploited (Batson & Ahmad, 2001), must be weighed by decision-makers when deciding whether to empathize with others (Cameron et al., 2017; Keysers & Gazzola, 2014; Zaki, 2014). Indiscriminate empathy can be unwise, especially when more prudential courses of action are available (Cameron et al., 2017; Keysers & Gazzola, 2014; Zaki, 2014).

Here, we highlight a less obvious cost that can motivate people to avoid empathy: the cognitive costs (e.g., effort, inefficacy) of empathizing with others. We argue that cognitive costs deter empathy over and above other costs of empathy, and that these are substantial enough to cause people to systematically avoid empathy. There are good reasons to believe that empathy might be felt as effortful. Empathizing with others, especially strangers, can involve uncertainty about their experiences. Attempting to share in these experiences may feel demanding because of less familiarity and external information to rely upon. Consistent with this claim, some work finds that perspective-taking is inhibited when people are placed under time pressure (Epley et al., 2004) or given a concurrent task (Davis et al., 1996), and that compassion is reduced under fatigue (Nelson, Klein, & Irvin, 2003). Here, we make a number of contributions beyond this prior work. First, we show that effort is implicated not just in perspective-taking, but also in experience sharing, an empathy facet for which effort costs are typically deemed less relevant.

Second, prior work has imposed effort manipulations externally, not examining how empathy is intrinsically effortful, even when no other costs are imposed. Our studies examine the inherent, built-in cognitive costs of empathy that shape willingness to empathize with others. We suggest that empathy is felt as effortful and aversive (even when sharing others' positive emotions), and these cognitive costs translate into a robust motivation to avoid empathy.

We predicted that when given the choice to share in the experiences of strangers, people would tend to avoid empathy, and that this would associate with perceived cognitive costs of empathy. This prediction draws upon neuroscience models of goal pursuit (Apps et al., 2015; Inzlicht, Bartholow, & Hirsh, 2015; Kurzban, 2015), and decades of research demonstrating that people prefer to avoid effort (Hull, 1943; Kool et al., 2010; Walton et al., 2006) unless it is offset by sufficient reward (Westbrook, Kester, & Braver, 2013). Prior work shows that people are motivated to avoid effort, but no studies have examined how this domain-general preference applies to empathy. Although there may be cases in which empathy is rewarding and approached rather than avoided (e.g., with kin), the point is that at baseline, cognitive costs can lead people to avoid it altogether. In a world where empathy is touted as helpful, its cognitive costs are under-appreciated and can usefully be brought into focus if empathy is to be increased.

To examine how cognitive costs can deter empathy, we developed the Empathy Selection Task, which uses behaviorally revealed preferences (Kool et al., 2010) to measure motivated empathy avoidance. In particular, the task assesses situation selection (Gross & Thompson, 2007), an emotion regulation strategy whereby people choose which situations to enter into based upon the emotions they want to feel. Our task uses the logic of behavioral economics to quantify the subjective value of empathy compared to other mental activities, and to link that value specifically to cognitive costs.

The Empathy Selection Task was modeled on previous tasks developed to understand motivations to engage in effort (Kool et al., 2010). Over repeated trials, participants chose between two card decks (see Figure 1). After choosing, participants saw a photo of a person, with the instructions differing depending on deck: if they chose the empathy deck they were instructed to empathize with the person and indicate the person's internal experiences, and if they chose the objective deck they were instructed to remain detached from the target and indicate the person's external features. The instructions were drawn from classic empathy manipulations in social psychology (Batson et al., 1997) and social neuroscience (Klimecki et al., 2014). When using the Empathy Selection Task, our dependent variables were people's spontaneous choices (i.e., proportion of choosing the empathy deck across trials, which were compared against chance), as well as post-task assessments of the cognitive costs associated with the empathy and objective decks. Deck selection provides a repeated-measures assessment of empathy avoidance—capturing empathy regulation processes in action—that extends beyond single-shot assessments of empathic outcomes (e.g., self-reports), and allows for variation of relevant factors both within the task (e.g., empathy target) and in testing conditions (e.g., by manipulating motivation prior to task performance).

We predicted that on average, participants would choose to avoid empathy, not because it evokes material or emotional costs, but because of its felt cognitive costs. Our results supported this prediction, suggesting that effort avoidance deters people from sharing in the experiences of

others, a central but underappreciated point in the study of empathy. The very *act* of trying to empathize may serve as its own deterrent, since it is perceived as more cognitively costly. People appear to set the limits of empathy based upon how hard they want to work.

Results and Discussion

Do people choose to avoid empathy? In Studies 1-3, we established that people chose to avoid empathy in the Empathy Selection Task. In these studies, participants made a series of choices between two card decks, one associated with empathy and the other associated with objective detachment. In Studies 1 and 2, when participants selected the empathy deck they were shown a person and instructed to feel empathy while writing about that person's internal experiences; when they selected the objective deck, they were instructed to remain detached and write about the person's external characteristics (e.g., age, gender). Study 3 provided the most conservative test of our claim: participants chose between decks that asked them to describe the person's emotions with only three keywords; in one deck, however, they were asked to describe external emotion expressions, while in the other, they were asked to feel empathy and describe internal emotional experiences. Thus, the words used, and the complexity of information to respond with was matched. Only the requirement to empathize differentiated the decks. As shown in Table 1, in all three studies participants avoided empathy.

Are people avoiding vicarious negative affect? Studies 4-6 excluded an alternative explanation: that people avoid empathy because they want to avoid vicarious negative experiences. We tested whether people avoid empathizing with someone experiencing positive states, which does not entail costly helping or vicarious negative emotion, as there is no clear suffering. If people were only avoiding vicarious negative emotion, then they should not show a clear preference to avoid empathy for positive targets; if avoiding empathy per se, people should avoid empathy both for negative and positive targets. In Studies 4 and 5, we randomly assigned participants to complete one of two versions of the Empathy Selection Task: the negative condition depicted adults displaying anger, and the positive condition depicted adults displaying happiness. In Study 6, we used the Empathy Selection Task variant from Study 3, but altered it so that targets preceded choices rather than coming afterward. It might be thought that when targets precede choices, people would spontaneously empathize and so be more likely to choose empathy. Yet if people still avoid the empathy deck, this would indicate strong motivation to avoid empathizing. Study 6 used a within-subjects manipulation of target affect, such that participants could see whether exemplars were happy or sad before making their choices. Thus, we could examine whether even when participants knew that empathy would be for positive states, they would still avoid it. As expected, participants avoided empathy for both negative and positive targets, and avoidance rates did not differ by valence (Study 4: $F(1, 191) = 3.15$, $p = .078$, 95% CI [-.16, .01], $\eta_p^2 = .02$; Study 5: $F(1, 204) = .03$, $p = .872$, 95% CI [-.08, .07], $\eta_p^2 = .00$; Study 6: $F(1, 49) = .16$, $p = .694$, 95% CI [-.09, .06], $\eta_p^2 = .00$). Figure 2 displays empathy choice by valence for Studies 4-6. These results suggest that people avoided empathy per se, not merely vicarious negative affect or implicit demands for help.

Are people avoiding emotionality? In the standard Empathy Selection Task, participants chose between empathy and objectivity. Perhaps people dislike being in *any* kind of emotional state. In Studies 7 and 8, we excluded this explanation by developing a "Feel-Self vs.

Feel-Other" variant of the Empathy Selection Task. Over repeated trials, participants chose either a "FEEL-SELF" or "FEEL-OTHER" deck and saw an emotion-inducing slide. If participants selected Feel-Self, they were instructed to focus on their own emotions. If participants selected Feel-Other, they were instructed to focus on the emotions of another person ostensibly viewing the same slide. In both cases, participants were asked to make a binary valence rating for the indicated target. The binary rating addresses another alternative explanation: that people avoid the empathy deck because they dislike verbalizing feelings. Thus, the revised task always focused on emotion, but allowed participants to choose whose emotions to focus on (their own or others'). Replicating earlier results, and as depicted in Table 1, participants avoided empathy (i.e., the Feel-Other deck). These results rule out alternative explanations that people were avoiding empathy verbalization or emotions more generally.

Internal meta-analysis of empathy choice. Table 1 depicts empathy choice across studies (N = 1,017). Participants avoided the empathy deck, choosing it 35.03% of the time. We examined mean difference of empathy choice from chance (50%), with Hedges' g reflecting whether this difference deviated from zero. Using random-effects meta-analysis, the standardized mean difference of empathy choice was -.67, 95% CI [-.84, -.50], Z = -7.68, p < .001, a large and robust empathy avoidance effect. In addition to these ten studies, we also conducted an additional ten studies to test other alternative explanations (see Supplemental Materials).

Why are people avoiding empathy? We suggest that people avoided empathy in the Empathy Selection Task because of perceived cognitive costs of empathy. In all studies, after the Empathy Selection Task participants completed the NASA Task Load Index (Hart & Staveland, 1988), rating the degree to which each deck was felt as effortful, aversive, and inefficacious. We expected that participants would rate empathy as more effortful, aversive, and inefficacious than the alternative, and that these costs would correlate with reduced empathy choice. Meta-analytically, participants perceived the empathy (vs. objective) deck as more effortful (Hedges' g = .62, p < .001), aversive (Hedges' g = .41, p < .001), and inefficacious (Hedges' g = .59, p < .001), and they were less likely to choose empathy when they perceived the empathy (vs. objective) deck as more effortful (r = -.22, p < .001), aversive (r = -.22, p < .001), and inefficacious (r = -.38, p < .001). Figure 3 displays associations aggregated across studies. For study-specific details, see Supplemental Materials.

How much does empathy cost? These findings raise the follow-up question: how much would it cost to motivate people to choose empathy? In Study 5, participants completed the Empathy Discounting Paradigm (Figure 4), adapted from effort discounting tasks (Westbrook et al., 2013). Participants made a series of choices between an objective deck trial for a varying lesser amount, or an empathy deck trial for a fixed larger amount, with the value after the final choice reflecting the point of indifference between the decks. The average indifference point was \$1.61 (SD = \$0.51), indicating that the subjective cost required for empathy was an additional \$0.39. Because its distribution was skewed, we square root transformed the cost measure. Participants who assigned greater cost to empathy chose empathy less, r = -.29, p < .001 (see Supplemental Materials for a replication). These results provide additional evidence that people were motivated to avoid empathy, and suggest that cognitive costs of empathy could be offset with external reward.

Manipulating subjective costs of empathy. If cognitive costs of empathy lead people to avoid choosing empathy, reducing these costs should increase empathy choice. We tested this prediction in Studies 9 and 10 by experimentally manipulating perceived efficacy of engaging in empathy. We manipulated efficacy by providing participants with positive (vs. negative) feedback on training trials of the Empathy Selection Task, and telling them that they were better than 95% or 50% of their peers at empathy, respectively. We implemented pre- and post-manipulation checks of efficacy for both empathy and emotion self-awareness to examine specificity of the manipulation. We used the NASA Task Load Index as another manipulation check. As expected, the manipulation checks indicated that the efficacy manipulation caused specific improvements in empathy efficacy, and reduced perceived cognitive costs of empathy on the NASA Task Load Index (see Supplemental Materials for analyses of manipulation checks). We expected that increasing empathy efficacy would increase empathy choice, which would support the construct validity of the Empathy Selection Task. As predicted, participants were more likely to choose empathy in the high-efficacy conditions than the low-efficacy conditions (Study 9: $F(1, 92) = 24.64$, $p < .001$, 95% CI [.16, .37], $\eta_p^2 = .21$; Study 10: $F(1, 93) = 12.01$, $p = .001$, 95% CI [.08, .29], $\eta_p^2 = .11$). Critically, not only did the efficacy manipulation lead to differences in empathy choice between groups, it eliminated empathy avoidance altogether for those in the high efficacy conditions (see Figure 6). Supporting our main hypothesis, subjective cognitive costs of empathy caused empathy avoidance.

Conclusion. Empathy is foundational to many moral systems and facilitates social interactions. Yet empathy carries costs, with some of the most well-known involving material and emotional costs. Here, we focused on a neglected deterrent to empathy: cognitive effort. Using a novel free choice measure of empathy regulation—the Empathy Selection Task—we found that people exhibit a robust and strong preference to avoid empathizing with strangers. Rather than simply asking people to self-report their empathy, we can observe how motivated they are to feel empathy by examining how they choose which situations they enter into.

In this work, we aimed to show that cognitive costs of empathy lead people to avoid empathy. To create a conservative test, we removed expectations of costly helping, which can inhibit empathy (Cameron & Payne, 2011; Shaw et al., 1994). Empathy avoidance in these studies did not appear to be about avoidance of helping, as it emerged even without requirements to help and for targets displaying positive affect. This pattern also suggests that empathy avoidance was not reducible to avoiding vicarious distress—even when they had the opportunity to share in positive experiences, participants chose not to. Finally, empathy avoidance was not reducible to avoiding emotions in general, or to verbalizing empathy. People preferred to focus on their own emotions over those of others, even when no written expression was required. When given the opportunity to share in the experiences of strangers, people chose to turn away.

Our results suggest that people avoid empathy because of its inherent cognitive costs, an underappreciated factor that seems to powerfully shape empathy. These costs may derive from uncertainty about constructing internal experiences of others, and such costs are used as signals that alternative goals should be pursued (Apps et al., 2015; Inzlicht et al., 2015; Kurzban, 2015). In the current studies, participants perceived empathy to be effortful, aversive, and inefficacious, and these costs associated robustly with choices to avoid empathy. Critically, experimentally increasing perceived efficacy at empathy eliminated empathy avoidance, and reduced the

perceived costs of empathy, suggesting that cognitive costs of empathy *cause* empathy avoidance. Our work is the first to show that reducing cognitive costs of empathy can increase motivation to empathize. Although some prior work has shown that imposing effort inhibits empathy (Epley et al., 2004; Davis et al., 1996; Nelson et al., 2003), no work has examined empathy's inherent effortfulness, nor how these costs lead people to actively avoid it.

Given that empathy is often assumed to be effortless, these findings are a novel contribution. While humans might learn to be prosocial in certain environments such that it becomes an overlearned heuristic (Rand et al., 2014), our results suggest that one contributor to prosociality (i.e., empathy) might incur significant cognitive costs that act as a disincentive from engaging in it. Other work finds that people are less willing to exert physical effort to benefit others than to benefit themselves (Lockwood et al., 2017). While related, that work focused on extraneous effort costs, asking whether people are willing to physically work hard for others (cf. Inzlicht & Hutcherson, 2017); in contrast, our findings suggest that empathy itself is demanding, requiring mental effort even without physical demands posed from the outside. Critically, that work focuses on prosocial behavior, not empathy. Empathy can motivate prosociality, but these are distinct (Batson, 2011).

It might be argued that in the Empathy Selection Task, empathy is effortful because of mundane task features rather than anything about empathy itself. For instance, constructing a response about external features such as gender and age might simply be easier than constructing internal experiences. In one sense, this is our very point: empathy requires more effort in part because it involves greater uncertainty and less immediately available information. By comparing empathy to closely matched tasks, we have shown that this results from empathy *per se*, as opposed to uninteresting features of the tasks used to evoke it. This was particularly evident for Studies 3 and 6, which elicited *identical* emotion information as the response from participants (namely, three emotion keywords) across decks, but varied whether they were also instructed to feel empathy. The robustness of empathy avoidance when task complexity was controlled is consistent with our suggestion that empathy itself is inherently cognitively costly, which is also why people tend to avoid it.

Our results do not imply people will never choose to feel empathy. These effort costs are likely to be contextually sensitive and depend on opportunity costs associated with other courses of action (Kurzban et al., 2013): when alternatives to empathy are comparably effortful, costs of empathy should seem lower and empathy avoidance should be reduced. Moreover, effort may not deter empathy if sufficient rewards can offset these costs—for example, people who have internalized empathic goals may choose empathy because their identification with empathy is a potent reward (Inzlicht, Legault, & Teper, 2014). Introducing competing pro-empathy goals, such as maintaining a moral self-concept (Cameron & Payne, 2012), might override effort costs and facilitate empathic approach. In some cases, the effort of empathy itself may act as a kind of reward, adding meaning and signaling prosocial commitment (Olivola & Shafir, 2013). People also clearly choose to engage in and enjoy empathy when they immerse themselves in narratives. Much as the satisfaction from solving a difficult Sudoku puzzle can offset effort costs, the ability to resonate with someone and to have a shared understanding—much as the rewards of a good story—may overcome the otherwise substantial cognitive costs of empathy. An important avenue for future research will be understanding which contexts and motivators can offset the

cognitive costs of empathy (e.g., empathizing with kin, Inzlicht & Hutcherson, 2017). The Empathy Selection Task provides a powerful tool for doing so.

Our research advances the study of prosociality by suggesting that empathy may not be easy—in many cases, particularly with strangers, it may require cognitive effort. Our work appears to challenge strong claims about intuitive prosociality (Zaki & Mitchell, 2013)—if empathy is hard work, then why are people sometimes *more* prosocial when they don't have time to engage in effortful thought (Rand et al., 2014)? Importantly, intuitive prosociality is contingent on the choice environment, and the "default" response varies depending on experiences and social norms (Rand et al., 2014). So too, whether empathy is felt as effortful and avoided as a result is likely to depend on relevant opportunity costs and the targets involved. Unlike empathy for strangers, empathy for loved ones may be less effortful, and cultivated rather than curtailed. Much as environments with cooperative social norms foster intuitive cooperation (Rand et al., 2014), environments that offset effort costs of empathy with sufficient social rewards, such as signaling trust to peers (Barasch et al., 2014), may foster empathy choice. Moreover, although empathy can motivate prosocial behavior (Tusche et al., 2016), there may be forms of habitual prosociality having little to do with empathy which prior work may be capturing. In sum, the expanse of empathy depends on the effort people want to expend.

Materials and Methods

Studies 1-3: Validating the Empathy Selection Task.
Study 1 included 56 participants on Amazon MTurk (29 female, 27 male, M_{age} = 38.36 years, SD_{age} = 12.22). Study 2 included 51 MTurk participants (29 female, 18 male, 4 unreported, M_{age} = 40.45, SD_{age} = 12.66). Power analyses using G*Power 3.1 suggest that for a one-sample *t* test to find a moderate effect (d = .40) with 80% power in a two-tailed test, a sufficient sample size is N = 52. Study 3 included 197 MTurk participants (111 female, 85 male, 1 unreported, M_{age} = 36.60, SD_{age} = 10.76). The sample size for Study 3 was increased in order to examine individual difference correlations, given that power analyses suggesting a sample size of N = 193 for detecting a modest correlation (r = .20) with 80% power in a two-tailed test. For full details about all samples, see Supplemental Materials. In the Empathy Selection Task in Studies 1 and 2, participants were instructed before the task that they would complete a series of trials on which they would see two decks of cards. Participants were instructed that they should choose between the decks freely, after which they would see an image of a person. They were told that if they chose the objective deck, they would be instructed to remain objectively detached and write a sentence about the person's age and gender; if they chose the empathy deck, they would be instructed to feel empathy and write a sentence about the person's internal experiences and feelings. For complete instructions, see Supplemental Materials. Participants completed 40 trials, on each trial making a choice between two card decks. In Study 1, the objective deck was always on the left, red, and labeled "DESCRIBE" and the empathy deck was always on the right, blue, and labeled "FEEL." In Study 2, decks were unlabeled (i.e., "DECK 1", "DECK 2"). After making a choice, participants saw an image of a child refugee. If participants chose the objective deck, they were instructed: "Look at the person in the picture, and try to notice details about the person. Objectively focus on the external features and appearance of this person. Please write one sentence describing the age and gender of this person." If participants chose the empathy deck, there were instructed: "Look at the person in the picture, and try to feel what this

person is feeling. Empathically focus on the internal experiences and feelings of this person. Please write one sentence describing the experiences and feelings of this person." In all studies, trials were randomized and a timer prevented participants from submitting written responses until 10 seconds had passed.

In Study 3, the Empathy Selection Task was adapted so that the objective deck instructions differed. In the pre-task instructions, participants were told that if they chose the objective deck, they would be instructed to remain detached and write three emotion keywords identifying the person's facial emotion expression; and that if they chose the empathy deck, they would be instructed to feel empathy (i.e., share in the person's experiences) and write three emotion keywords to describe the person's internal emotional experiences. For complete instructions, see Supplemental Materials. On objective trials, participants were instructed: "Look at the person in the picture, and try to identify the emotion of this person. Objectively focus on the external facial expression of this person. Please write 3 keywords describing the objective facial expression of this person." On empathy trials, participants were instructed: "Look at the person in the picture, and try to feel what this person feels. Empathically share in the internal emotional experience of this person. Please write 3 keywords describing the subjective emotional experience of this person." The people depicted were Black and White male and female actors from the Chicago Face Database (Ma, Correll, & Wittenbrink, 2015) displaying anger. Decks were unlabeled ("DECK A" and "DECK B").

In all studies, participants completed post-task open-ended responses (see Supplemental Materials). For each deck, participants then answered questions from the NASA Task Load Index (35): "How mentally demanding was this deck?" "How hard did you have to work to accomplish your level of performance with this deck?" "How insecure, discouraged, irritated, stressed, and annoyed were you by this deck?" "How successful were you in accomplishing what you were asked to do in this deck?" The first two questions assessed effort, the third assessed aversiveness, and the fourth measured efficacy/success.

Studies 4-6: Manipulating Target Affect.

Study 4 included 193 MTurk participants (108 female, 85 male, M_{age} = 36.73, SD_{age} = 11.63). Study 5 included 206 MTurk participants (117 female, 83 male, 6 unreported, M_{age} = 36.48, SD_{age} = 12.16). Study 6 included 50 MTurk participants (28 female, 22 male, M_{age} = 35.14, SD_{age} = 9.67). Power analyses using G*Power 3.1 suggest that for an independent-samples *t* test to find a moderate effect (d = .40) with 80% power in a two-tailed test, a sufficient sample size is N = 200, and for a within-subjects test a sufficient sample size is N = 52. In Studies 4 and 5, the Empathy Selection Task was nearly identical to Study 1, except that valence was manipulated between subjects, and target images were 40 Black and White female and male actors from the Chicago Face Database (Ma et al., 2015). In the negative condition, these actors displayed anger; in the positive condition, these actors displayed happiness. Study 5's Empathy Selection Task had unlabeled decks. In Study 6, the Empathy Selection Task was nearly identical to Study 3, except that participants viewed targets *prior* to their choices and sadness was the negative emotion. Target valence was manipulated within subjects, such that participants saw 20 White female and male actors from the NimStim Database (Tottenham et al., 2009) displaying sadness or happiness. Decks were unlabeled. In Study 5, participants also completed the Empathy Discounting Paradigm, modeled on effort discounting paradigms. This involved a series of

choices between hypothetical trials of the Empathy Selection Task, with empathy for a fixed larger reward ($2) or objectivity for a varying lesser reward. As discussed in the Supplemental Materials, the cost for the objective deck was adjusted up or down depending on previous choices, and cost of the objective deck after the final choice reflected the point of indifference between empathy and objectivity.

Studies 7-8: Feel-Self vs. Feel-Other Variant.

Study 7 included 91 MTurk participants (39 female, 51 male, 1 other, M_{age} = 35.31, SD_{age} = 12.41). Study 8 included 89 MTurk participants (48 female, 41 male, M_{age} = 38.33, SD_{age} = 12.57). The Empathy Selection Task was similar to previous studies, except that decks were labeled FEEL-SELF or FEEL-OTHER, and after making a choice participants saw an image from the International Affect Picture System (Lang, Bradley, & Cuthbert, 1997) and evaluated how it made them or another person feel. If participants chose the empathy (FEEL-OTHER) deck, they were instructed to make a binary rating (positive/negative) of how the image made another person feel; if participants chose the objective (FEEL-SELF) deck, they were instructed to make the same rating about how the image made them feel. See Supplemental Materials for details.

Studies 9-10: Manipulating Empathy Efficacy.

Study 9 included 94 MTurk participants (53 female, 41 male, M_{age} = 34.27, SD_{age} = 9.99). Study 10 included 95 MTurk participants (58 female, 37 male, M_{age} = 37.49, SD_{age} = 12.02). Participants completed pre-test manipulation checks for efficacy of empathy and emotion self-awareness: "I usually feel like I am very aware of and good at understanding exactly what other people are feeling." "I usually feel like I am very aware of and good at understanding exactly what I'm feeling." Instructions for the Empathy Selection Task were similar to Study 3, except that participants were instructed to enter three emotion keywords on the empathy deck and three physical descriptor keywords on the objective deck. The efficacy manipulation was embedded into counterbalanced practice blocks for the empathy and objective decks. In objective deck practice, participants completed four trials with four White female exemplars from the Chicago Face Database (two happy, two angry), and were instructed: "Look at the person in the picture, and try to notice details about this person. Objectively focus on the external features and appearance of this person. Please provide 3 keywords describing the objective physical features of this person." In empathy deck practice, participants completed four trials with the same exemplars displaying the other emotion. On each trial, participants were instructed: "Look at the person in the picture, and try to feel what this person is feeling. Empathically focus on the internal experiences and feelings of this person. Please write 3 keywords describing the experiences and feelings of this person." Participants saw their responses along with accuracy feedback. In the low-efficacy condition, participants were told they were accurate on all objective trials and half of empathy trials, and that they were better than 50% of others on the empathy deck and 95% of others on the objective deck. In the high-efficacy condition, this feedback was reversed: participants were told they were accurate on all empathy trials and half of objective trials, and that they were better than 95% of others on the empathy deck and 50% of others on the objective deck. See Supplemental Materials for full details. Participants completed the efficacy manipulation checks again, followed by the NASA Task Load Index. Participants then completed 24 test trials of the Empathy Selection Task, which were identical to practice except that participants chose between decks and no feedback was provided. Targets were 12 novel Black and White female exemplars from the Chicago Face Database, with each actor

presented twice (displaying anger and happiness). After the Empathy Selection Task, participants completed the NASA Task Load Index a second time.

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Table 1. Empathy choice in Studies 1-10.

Study	Emp. Choice *M* (*SD*)	95% CI M_{diff}	*t*	*N*	Hedges' *g*
1	0.33 (0.27)	[-0.24, -0.10]	-4.70	56	-0.62
2	0.26 (0.25)	[-0.31, -0.16]	-6.59	47	-0.95
3	0.41 (0.29)	[-0.13, -0.05]	-4.19	196	-0.30
4	0.38 (0.29)	[-0.17, -0.08]	-5.87	193	-0.42
5	0.34 (0.26)	[-0.19, -0.12]	-8.81	206	-0.61
6	0.38 (0.35)	[-0.22, -0.02]	-2.47	50	-0.34
7	0.30 (0.19)	[-0.24, -0.16]	-9.69	91	-1.01
8	0.34 (0.18)	[-0.20, -0.12]	-8.67	89	-0.91
9	0.23 (0.25)	[-0.35, -0.20]	-7.28	44	-1.08
10	0.33 (0.24)	[-0.25, -0.10]	-4.85	45	-0.71
Total				1017	**-0.67**

Note. All *p*s < .001 except Study 6 (*p* = .017). Studies 9 and 10 only include low-efficacy conditions.

Figure Legends

Figure 1. Empathy Selection Task. Over repeated trials, participants choose a deck and then see an image of a person. Based upon choice, participants are instructed to either feel empathy or be objective and write a response.

Figure 2. Empathy choice by valence condition, Studies 4-6. Participants avoided empathy in the negative conditions (Study 4: M = .41, SD = .30, 95% CI [-.15, -.03], t = -2.80, Hedges' g = -.28; Study 5: M = .35, SD = .26, 95% CI [-.20, -.11], t = -6.37, Hedges' g = -.59; Study 6: M = .37, SD = .38, 95% CI [-.24 -.02], t = -2.46, Hedges' g = -.34) and positive conditions (Study 4: M = .34, SD = .28, 95% CI [-.22, -.11], t = -5.66, Hedges' g = -.57; Study 5: M = .34, SD = .26, 95% CI [-.21, -.11], t = -6.05, Hedges' g = -.61; Study 6: M = .38, SD = .38, 95% CI [-.22 -.01], t = -2.20, Hedges' g = -.31). All ps < .020 except Study 6 (p = .017 negative, .032 positive).

Figure 3. Associations of empathy choice with NASA Task Load Index ratings of effort, aversiveness, and efficacy.

Figure 4. Empathy Discounting Paradigm, Study 5. Dollar values indicate iterated cost of objective deck on each trial, depending on previous choice. Participants make series of choices between objective deck for a varying lesser amount, or empathy deck for fixed larger amount ($2.00). If larger (smaller) offer is selected, offer for the objective deck is increased (decreased) on next choice. The amount of increase/decrease halves with each choice, and value after final adjustment reflecting point of indifference between the decks. Subjective cost of empathy is offer for the empathy deck ($2.00) minus the indifference point, quantifying additional money required to empathize.

Figure 5. Empathy choice by efficacy condition, Studies 9-10. Participants avoided empathy in the low-efficacy conditions (Study 9: M = .23, SD = .25, 95% CI [-.35, -.20], t = -7.28, Hedges' g = -1.08; Study 10: M = .33, SD = .24, 95% CI [-.25, -.10], t = -4.85, Hedges' g = -.71) but not in the high-efficacy conditions (Study 9: M = .49, SD = .27, 95% CI [-.08, .07], t = -.20, Hedges' g = -.03; Study 10: M = .51, SD = .27, 95% CI [-.07, .08], t = .18, Hedges' g = .02). In low-efficacy conditions, ps < .001; in high-efficacy conditions, ps > .840.

Figure 1.

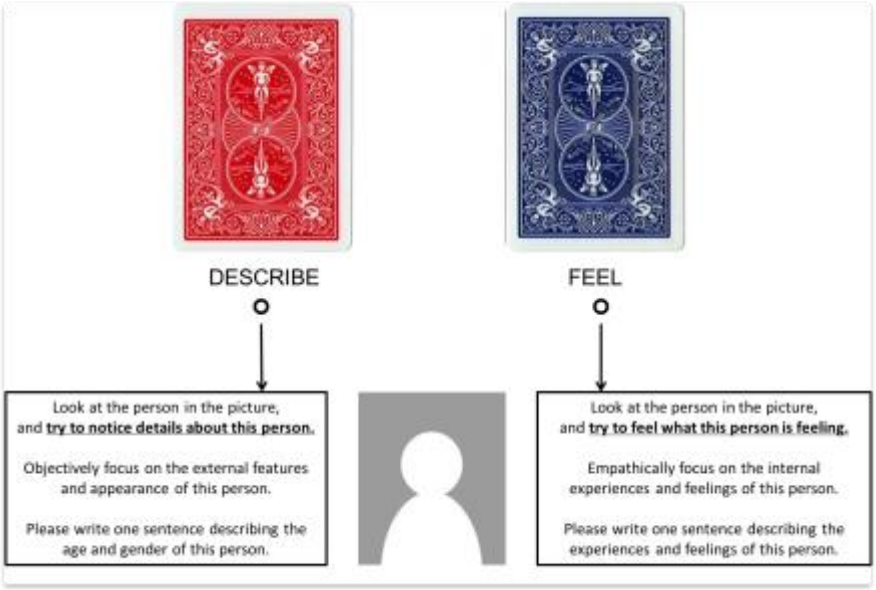

DESCRIBE
FEEL
Look at the person in the picture, and try to notice details about this person.
Objectively focus on the external features and appearance of this person.
Please write one sentence describing the age and gender of this person.
Look at the person in the picture, and try to feel what this person is feeling.
Empathically focus on the internal experiences and feelings of this person.
Please write one sentence describing the experiences and feelings of this person.

Figure 2.

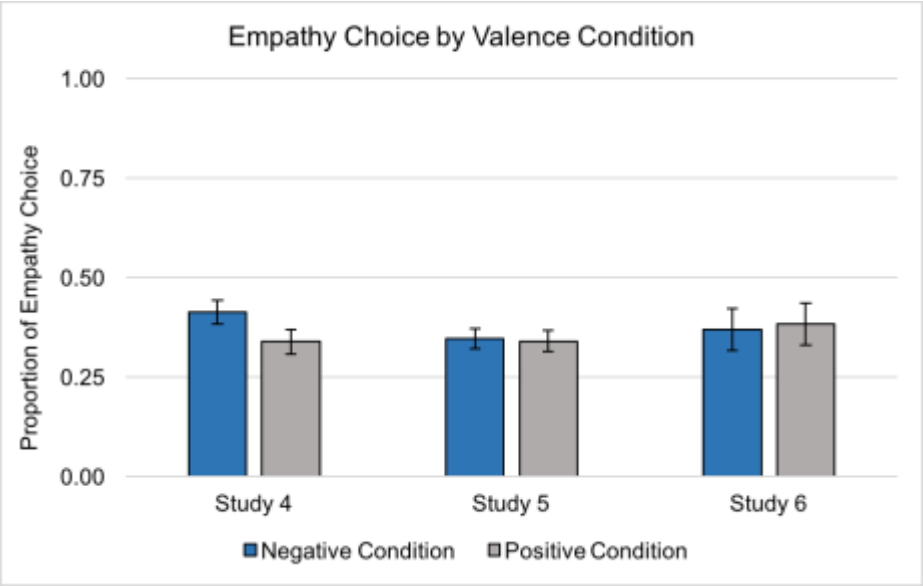

Empathy Choice by Valence Condition
Proportion of Empathy Choice
1.00
0.75
0.50
0.25
0.00
Study 4
Study 5
Study 6
Negative Condition
Positive Condition

Figure 3.

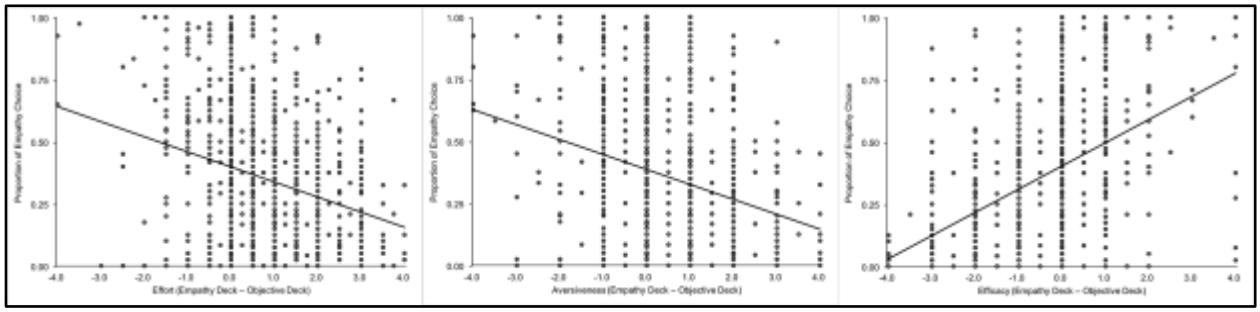

Proportion of Empathy Choice
Effort (Empathy Deck – Objective Deck)
Aversiveness (Empathy Deck – Objective Deck)
Efficacy (Empathy Deck – Objective Deck)

Figure 4.

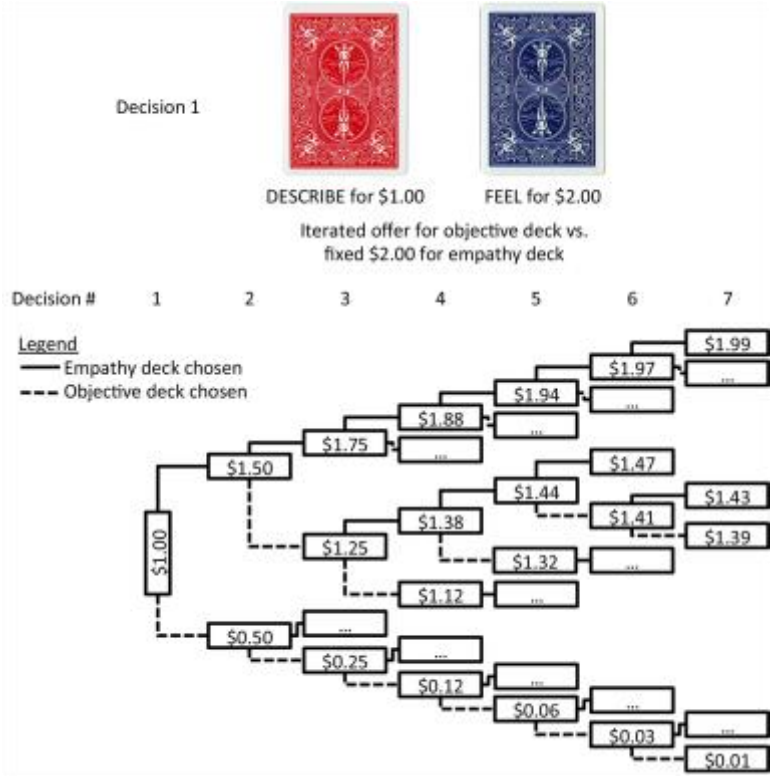
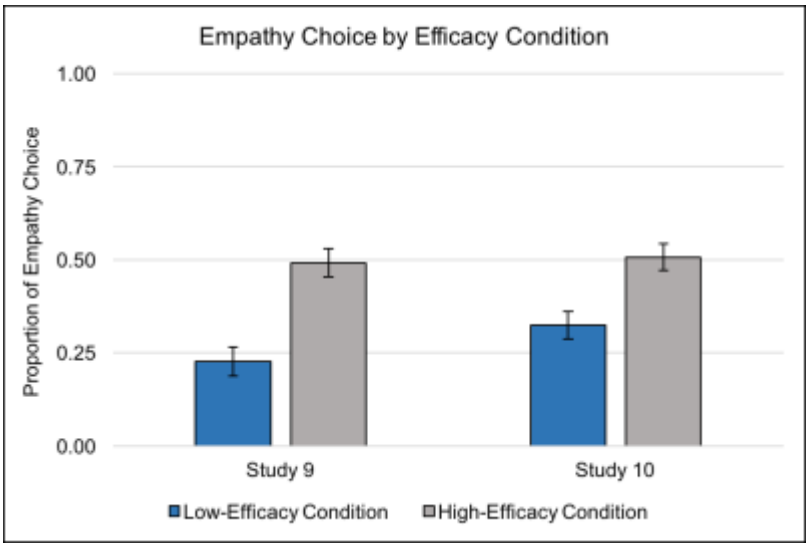

Decision 1
DESCRIBE for $1.00
FEEL for $2.00
Iterated offer for objective deck vs.
fixed $2.00 for empathy deck
Decision #
1
2
3
4
5
6
7
Legend
Empathy deck chosen
Objective deck chosen
$1.00
$1.50
$1.75
$1.88
$1.94
$1.97
$1.99
$1.25
$1.38
$1.44
$1.47
$1.41
$1.43
$1.39
$1.32
$1.12
$0.50
$0.25
$0.12
$0.06
$0.03
$0.01

Figure 5.


Empathy Choice by Efficacy Condition
Proportion of Empathy Choice
1.00
0.75
0.50
0.25
0.00
Study 9
Study 10
Low-Efficacy Condition
High-Efficacy Condition