Prosocial Conformity: Prosocial Norms Generalize Across Behavior and Empathy

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Abstract

Generosity is contagious: People imitate others' prosocial behaviors. However, research on such *prosocial conformity* focuses on cases in which people merely reproduce others' positive actions. Hence, we know little about the *breadth* of prosocial conformity. Can prosocial conformity cross behavior types or even jump from behavior to affect? Five studies address these questions. In Studies 1 to 3, participants decided how much to donate to charities before learning that others donated generously or stingily. Participants who observed generous donations donated more than those who observed stingy donations (Studies 1 and 2). Crucially, this generalized across behaviors: Participants who observed generous donations later wrote more supportive notes to another participant (Study 3). In Studies 4 and 5, participants observed empathic or non-empathic group responses to vignettes. Group empathy ratings not only shifted participants' own empathic feelings (Study 4), but they also influenced participants' donations to a homeless shelter (Study 5). These findings reveal the remarkable breadth of prosocial conformity.

Conformity often gets a bad rap. Le Bon (1895/2002) and McKay (1841/2003) famously construed group-motivated behaviors as a sign of "mindlessness" that ultimately produces poor decision-making. Indeed, social norms can encourage maladaptive behaviors. People consume excess alcohol, fail to help others, and act in environmentally damaging ways when they believe others have done the same (Cialdini, 2003; Latané & Darley, 1968; Prentice & Miller, 1993). However, social influence can also motivate people to behave *prosocially*, by donating to charity (Frey & Meier, 2004; Shang & Croson, 2009; Silverman, Robertson, Middlebrook, & Drabman, 1984), acting fairly in game theoretic tasks (Bardsley & Sausgruber, 2005; Bicchieri & Xiao, 2009; Fowler & Christakis, 2010; Peysakhovich & Rand, 2013), protecting the environment (Cialdini, Reno, & Kallgren, 1990; Goldstein, Cialdini, & Griskevicius, 2008), and voting (Bond et al., 2012; Nickerson, 2008).

These studies demonstrate the power of *prosocial conformity* by showing that group norms inspire people to be helpful. However, they leave crucial questions unanswered because they focus on cases in which people produce the same helpful actions they observe in others. For example, people donate more to a charity if they are told that others have done so (Shang & Croson, 2009). As such, results from these studies say little about the potential *breadth* of

prosocial conformity: We cannot tell from these data alone whether prosocial norms only drive the imitation of particular prosocial behaviors or whether they generalize more broadly across time, behaviors, contexts, or even psychological domains.

At least two models could explain existing work on prosocial conformity. On a *narrow* account, prosocial conformity could represent mere imitation of others' actions, consistent with work demonstrating that people take on each others' movements (Chartrand & Bargh, 1999; Dijksterhuis, 2001) and manner of speaking (Natale, 1975; Street, Street, & Van Kleek, 1983). However, on a *broad* account, prosocial conformity arises when people adopt the deeper goals and motives of those around them (Aarts, Gollwitzer, & Hassin, 2004). A broad account would further predict that observations of prosociality could motivate individuals to perform empathic and kind behaviors even in novel contexts. For instance, observing one type of prosocial behavior

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(e.g., charitable donation) could motivate *other* prosocial behaviors (e.g., providing interpersonal emotional support) or even cross psychological domains and influence one's *affective* responses to people in need.

Here, we examine whether observing prosocial behavior exerts broad impacts on individuals' own prosociality at two levels. First, we test whether observing one prosocial behavior can prompt individuals to engage in qualitatively different prosocial behaviors at a later time and in a different context. Second, we investigate whether observing others' prosocial behaviors can cross domains and induce prosocial emotions (i.e., empathy). We also test this in the reverse direction: whether observing others' prosocial emotions can produce prosocial behaviors.

Extant research on prosocial conformity cannot adjudicate between narrow and broad accounts of prosocial conformity, limiting basic understanding of human prosociality. This dearth of knowledge also leaves unclear whether interventions that use norms to "nudge" prosocial behavior (e.g., Cialdini, 2003; Peysakhovich & Rand, 2013; Thaler & Sunstein, 2008) should be expected to produce broad and long-lasting—versus narrow and short-lived—changes in behavior. In addition, if prosocial conformity indeed spreads across affect and action, this knowledge could promote novel intervention techniques that focus on instilling prosocial *empathic* norms, in addition to *behavioral* norms. Note that our discussion of group norms focuses primarily on descriptive, rather than injunctive norms (i.e., how a group tends to behave, rather than how the group instructs members to behave).

Social Influence Across Contexts

Early research on social influence examined relatively narrow instances of conformity. Solomon Asch (1951) famously demonstrated that about one third of participants gave incorrect responses in a simple line judgment task if others answered incorrectly. However, subsequent research found that people conformed more in such situations when face to face with others than when allowed to respond anonymously (Deutsche & Gerard, 1955). This launched the suspicion that the impact of social influence may be limited to specific contexts, most notably, when the people who are the source of the influence are present. In support of this idea, Cialdini and colleagues (Cialdini, Levy, Herman, & Evenbeck, 1973; Cialdini, Levy, Herman, Kozlowski, & Petty, 1976) found that people shifted their opinions to resemble those of a potential conversation partner only temporarily: Their opinions returned to baseline if the conversation was canceled. Cialdini called this phenomenon the "elastic" shifting of opinions and behaviors because participants "snapped back" to their baseline opinions when social presence was removed. This phenomenon resonates with our description of narrow conformity: Observing others' behaviors may only prompt the replication of those behaviors when they are directly observed.

Later research, however, showed that social influence can produce deeper, more stable changes in beliefs (see Prislin & Wood, 2005; Wood, 2000, for reviews). For instance, the classic "Saying is Believing" effect (Higgins & Rholes, 1978) demonstrates that people shift their perceptions of a social target (e.g., a new colleague) to match the attitudes of a conversation partner and that doing so affects their long-lasting opinions and memories of that person (Hausmann, Levine, & Higgins, 2008; Higgins, 1999). Likewise, Chen, Shechter, and Chaiken (1996) found that introducing the goal to affiliate with a conversation partner drove participants to shift their opinions toward those of their partner. Impressively, these shifts in opinion remained even weeks after the conversation. Lundgren and Prislin (1998, Study 1) demonstrated that similar manipulations shifted attitudes even when individuals expressed them privately and anonymously after the conversation.

Additional evidence for social influence across contexts comes from research on goal contagion. Aarts et al. (2004) demonstrated that people adopt the intentions underlying others' behavior. For instance, reading a vignette about a man whose actions indicated a goal for gaining money or for sexual intimacy led participants to act in ways that were more consistent with those goals compared with when they read control vignettes. Critically, participants did not emulate the specific *action* of the vignettes' characters, but rather they behaved according to the characters' broader *goals* in novel contexts (see also Loersch, Aarts, Payne, & Jefferis, 2008). This body of work truly highlights the breadth of social influence: Observing others' actions not only affects later decision-making, but also it can inculcate behaviors that differ qualitatively from those that were observed.

Finally, a series of neuroimaging studies find that group attitudes can shift neural responses to value-laden stimuli. Zaki and colleagues exposed undergraduate students to ostensible peer preferences for attractive faces (Zaki, Schirmer, & Mitchell, 2011) or foods (Nook & Zaki, 2015) and later asked participants to rerate images while undergoing functional magnetic resonance imaging. Peer ratings not only shifted participants' reported preferences, but they also affected activity in the ventromedial prefrontal cortex (vmPFC). Activity in the vmPFC was greater in response to "popular," as compared to "unpopular," stimuli. Given that the vmPFC is reliably associated with computing the value of stimuli (Grabenhorst & Rolls, 2011; Hare, O'Doherty, Camerer, Schultz, & Rangel, 2008), this result suggests that participants shifted their internal evaluation of stimuli toward peer preferences (see also Campbell-Mieklejohn, Bach, Roepstorff, Dolan, & Frith, 2010; Prehn et al., 2014). Socially influenced preference changes in tasks such as these last up to 3 days (Huang, Kendrick, & Yu, 2014a), suggesting that influence persists even in the absence of continued social pressures.

The foregoing work demonstrates that social influence often represents more than mere imitation. At least in some cases, others' actions and opinions cause broad changes in one's beliefs and behaviors that generalize across time, context, and psychological domain. However, the extent to which *prosocial* conformity operates with the same breadth remains unstudied.

Influence Across Emotion and Behavior

One reason to expect that prosocial conformity should generalize across domains is that powerful emotional states often drive prosocial acts. Although prosocial behaviors arise from many sources (see Dovidio, Piliavin, Schroeder, & Penner, 2006; Meier, 2007; Rand & Nowak, 2013; Zaki & Mitchell, 2013, for reviews), *empathy* often motivates prosociality (Batson et al., 1991; Batson, Duncan, Ackerman, Buckley, & Birch, 1981; but see also Cialdini, 1991). By "empathy" we mean a suite of distinct but interrelated processes: sharing, understanding, and caring about others' internal states (Batson, 2011; Zaki & Ochsner, 2012, 2016). According to the empathy-altruism model (Batson, 2011; Batson et al., 1991), empathy produces a powerful motivation to improve others' well-being, which prompts kind and generous behavior. In line with this account, empathy motivates individuals to help others. Batson and colleagues accumulated a substantial line of evidence showing that inducing empathy for a target enhances efforts to help, both in social-psychological helping situations and in economic games (e.g., Batson & Ahmad, 2001; Batson & Moran, 1999; Toi & Batson, 1982). Furthermore, depriving empathic individuals of an opportunity to help causes them distress (Batson et al., 1988), and *dispositional* empathic concern predicts one's willingness to engage in prosocial behaviors that arouse feelings of sympathy (Davis et al., 1999).

These data demonstrate that empathy and prosocial behavior are deeply intertwined within individuals. Thus, if social norms influence prosocial behaviors, they might also affect prosocial emotions, such as empathy. People often vicariously take on each other's "basic" emotions (e.g., happiness and dysphoria; Coyne, 1976; Hatfield, Cacioppo, & Rapson, 1993) and also vicariously share more social emotions such as embarrassment (Krach et al., 2011). It follows that observing others empathize with a social target might cause individuals to empathize with that target. Although empathy often appears automatic and outside people's control, an emerging theoretical model suggests that empathy is instead *motivated*. Under this account, people approach or avoid engaging with others' emotions based on their motives for doing so in a given context (see Keysers & Gazzola, 2014; Zaki, 2014, for reviews). One motive that could drive people to approach empathy is its social desirability. Consistent with this prediction, people who believe that empathy is socially desirable to their group are more likely to exhibit empathy themselves (Tarrant, Dazeley, & Cottom,

2009; Thomas & Maio, 2008). Hence, there is good reason to believe that observing others empathize with a social target will also boost empathic engagement.

Combining these lines of evidence generates a novel prediction: If social norms motivate empathy and empathy prompts prosociality, this effect might also occur *across* individuals, such that one person's empathy may prompt another's prosociality. If so, merely observing others engaging empathically with a target may be sufficient to stimulate prosocial behavior toward that target. For example, learning that one's group empathizes with homeless people might motivate an individual to prosocially support the homeless. Hence, under a broad account, prosocial conformity could "jump" between the domains of affect and action. Viewing others' prosocial *behaviors* might motivate an individual to *feel* empathy, and observing others' *empathy* could inspire individuals to *behave* prosocially even without observing any prosocial actions at all.

Research Overview

We explored the breadth of prosocial conformity across five studies. Studies 1 to 3 examined whether prosocial norms generalize across behaviors. In these studies, participants viewed others engage in a specific form of prosociality (i.e., charitable donation). We first tested a narrow form of prosocial conformity by assessing whether observing generous or stingy donations affected participants' own donation behaviors (Study 1). We then tested whether prosocial conformity persists after a delay and in the absence of continued information about group behavior (Study 2). Finally, we examined whether observing others engage in one type of prosocial act (i.e., charitable donation) causes individuals to act prosocially in a novel context by writing supportive notes to other participants (Study 3).

Studies 4 and 5 tested whether prosocial norms generalize across the psychological domains of behavior and affect. In these studies, participants read vignettes about social targets before learning that other participants felt strong or weak empathy for the characters in the vignettes. We first tested whether observing a group's feelings of empathy affected participants' own reported empathy (Study 4). We then tested whether merely observing a group's empathy influenced participants' prosocial behaviors (i.e., how much they donated to charity, Study 5).

Study 1—Imitation of Prosocial Behavior

In Study 1, we created and tested a paradigm in which people repeatedly donated to charities and then learned about others' typical donation behaviors (see Shang & Croson, 2009; Zaki et al., 2011). We hypothesized that participant behavior would shift to resemble group behaviors, such that participants who observed generous charity donations would

donate more than those who observed stingy donations. This paradigm replicates extant work on narrow prosocial conformity and provides a foundation for extensions of this paradigm through subsequent studies.

Method

Participants. We recruited 102 participants from Amazon Mechanical Turk (mTurk), an online workplace that provides reliable behavioral data (Buhrmester, Kwang, & Gosling, 2011; Crump, McDonnell, & Gureckis, 2013; Horton, Rand, & Zeckhauser, 2011; Rand, 2012). Participants provided informed consent, were paid US$1 for their participation, and received an additional bonus based on their charitable donation decisions (see below). To our knowledge, no other studies have employed the methods we use here to test the generalization of prosocial norms, making a power analysis based on prior literature impossible. Consequently, we recruited at least 50 participants per cell in all studies. Given that Cohen (1988) suggested a minimum of 30 participants per cell to detect medium-sized effects, these sample sizes should provide sufficient power to allow confidence in our results. The Stanford University Institutional Review Board approved all studies.

Stimuli and procedure. Participants received a US$1 bonus on top of their base payment and were informed that they could donate as much of this amount as they wished to charity. Note that this bonus effectively doubled the base payment participants could receive for their time, making decisions to sacrifice this bonus quite substantial. In addition, a bonus of this size has been shown to influence behavior in economic games on mTurk (Amir, Rand, & Gal, 2012). Participants then completed 100 randomly ordered *charity donation* trials, one of which was randomly selected and actually enacted. This technique encouraged participants to respond honestly, as their decisions affected their own finances and the income of a charity (cf. Hare, Camerer, & Rangel, 2009; Zaki & Mitchell, 2011). We chose 100 trials to allow enough time for temporal changes in donations to emerge without overtaxing participants.

Trials consisted of a unique charity's logo above a 100-point sliding scale, which participants used to indicate how much they would donate to that charity (see Supplemental Materials for details of charity selection). After each decision, participants saw an amount that ostensibly represented the average donation given to that charity by the previous 100 participants. In actuality, we manipulated these amounts by randomly assigning participants to one of two *group norm* conditions. Participants in the *generous norm* condition (*n* = 52) viewed group donations that were relatively generous, drawn from a normal distribution with a mean of US$0.75 (*SD* = US$0.10; range = US$0.51-US$1.00), whereas participants in the *stingy norm* condition (*n* = 50) viewed less generous group donations drawn from a normal distribution with a mean of US$0.25 (*SD* = US$0.10; range = US$0.01-US$0.49).
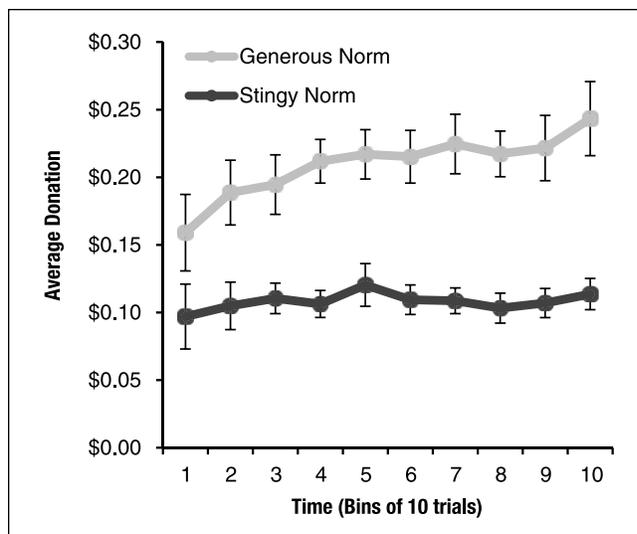

Figure 1. Participants' average donations for each bin of 10 trials, separated by condition in Study 1.
Note. The light gray line represents average donations made by participants who learned that peers tended to donate generously, whereas the dark gray line represents average donations made by participants who learned that peers tended to donate stingily. Error bars represent 95% confidence intervals, adjusted for within-subjects comparisons following Morey (2008).

We analyzed participants' donations in 10 bins of 10 trials each. To determine the effect of norms on prosociality over time, mean donation amounts for each bin were subjected to a 2 (group norm: generous vs. stingy) × 10 (time: bins 1 through 10) ANOVA, with group norm as a between-subjects variable and time as a within-subjects linear contrast. To ensure that group differences are not due to failures of randomization, we conducted a *t* test to compare donations on the very first trial before participants received any information regarding group donations. For all studies, we report partial eta-squared effect sizes (with 90% confidence intervals [CIs]) for ANOVAs and Cohen's *d* for *t* tests, following the recommendations of Lakens (2013).

Results and Discussion

Participants donated significantly more in the generous norm (*M* = US$0.21, *SD* = 0.27) condition than in the stingy norm (*M* = US$0.11, *SD* = 0.15) condition, $F(1, 100) = 5.50$, *p* = .02, $\eta_p^2 = .05$, 90% CI = [.004, .14] (Figure 1). Donations also increased over time, $F(1, 100) = 8.89$, *p* = .004, $\eta_p^2 = .08$, 90% CI = [.02, .18], but this effect was qualified by a significant Norm × Time interaction, $F(1, 100) = 5.73$, *p* = .02, $\eta_p^2 = .05$, 90% CI = [.005, .14]. In particular, participants in the generous norm condition steadily increased their donations, $F(1, 51) = 9.73$, *p* = .003, $\eta_p^2 = .16$, 90% CI = [.03, .31], whereas those in the stingy norm condition did not, $F(1, 49) = 0.36$, *p* = .55, $\eta_p^2 = .007$, 90% CI = [0, .09]. Donations on the first trial (before participants observed

group donations) was US$0.09 on average and did not differ between groups, $t(100) = 0.24$, $p = .81$. The absence of initial differences in donations suggests that subsequent group differences reflect the influence of group norms, not randomization failure.

Results demonstrate that people imitate the generous or stingy behaviors they observe in others. Participants in the generous norm condition shifted their ratings toward the range of group donations they observed, and participants in the stingy norm condition maintained stable, low donations that were within the range of donations given by their group. These results support prior work on prosocial conformity (e.g., Shang & Croson, 2009) and are likewise consistent with both broad and narrow accounts of prosocial conformity.

Study 2—Persistence of Prosocial Behavior

Study 1 confirmed that individuals conform to others' prosocial behaviors when given trial-by-trial information about group norms. In Study 2, we replicated this finding and extended it by assessing whether normative behavior persists after a delay and in the absence of continued group information. Study 2 also aimed to develop a method that could be used in future studies to induce prosocial norms that would persist over time. Hence, this study tested whether a shortened (i.e., 50-trial) charity donation task would continue to affect prosocial behaviors even after a short delay.

Method

Participants. One hundred four mTurk participants completed Study 2. We removed data from three participants who had already completed Study 1, leaving a sample of 101 participants.

Stimuli and procedure. Participants completed a shortened donation task that comprised 50, instead of 100, trials but was otherwise identical to Study 1 ($n_{\text{generous}} = 50$, $n_{\text{stingy}} = 51$). They then completed 102 trials of a 1-back task, in which a single letter appeared and participants indicated whether it matched the letter shown in the previous trial. Following this delay, participants completed 50 more charitable donation trials without information as to average group donations.

To test for prosocial conformity in the first phase of Study 2, we analyzed mean donations for the first five bins of 10 trials using a 2 (group norm: generous vs. stingy) × 5 (time: bins 1 through 5) ANOVA. We again conducted a *t* test to compare donations on the very first trial across groups to ensure that group differences did not emerge due to failure of randomization. To determine whether prosocial norms persist after a break and in the absence of feedback, we analyzed donation behavior in the last five bins using a separate 2 (group norm: generous vs. stingy) × 5 (time: bins 6 through 10) ANOVA. We also used follow-up paired-samples *t* tests

to assess whether donation amounts for each group differed across the break period (i.e., whether giving in Bin 5 differed from Bin 6 in each condition).

Results and Discussion

Charity donations with feedback. Participants gave more when observing generous donations ($M = $ US$0.23, $SD = 0.24$) than stingy donations ($M = $ US$0.11, $SD = 0.15$), $F(1, 99) = 9.14$, $p = .003$, $\eta_p^2 = .08$, 90% CI = [.02, .18]. There was a significant linear effect of Time, $F(1, 99) = 13.69$, $p < .001$, $\eta_p^2 = .12$, 90% CI = [.04, .22], that was qualified by a Norm × Time interaction, $F(1, 99) = 4.42$, $p = .04$, $\eta_p^2 = .04$, 90% CI = [.001, .12]. As in Study 1, participants steadily increased their donations when peers were generous, $F(1, 49) = 12.37$, $p = .001$, $\eta_p^2 = .20$, 90% CI = [.06, .35], but not when they were stingy, $F(1, 50) = 1.96$, $p = .17$, $\eta_p^2 = .04$, 90% CI = [0, .15] (Figure 2). Donations on the first trial were US$0.11 on average and did not differ between groups, $t(99) = -0.24$, $p = .81$, suggesting that subsequent group differences are not due to randomization failure.

Charity donations without feedback. Even after a break and without continued group feedback, participants who initially observed generous donations continued to donate more ($M = $ US$0.23, $SD = 0.25$) than those who observed stingy donations ($M = $ US$0.12, $SD = 0.18$), $F(1, 99) = 7.48$, $p = .007$, $\eta_p^2 = .07$, 90% CI = [.01, .16]. Paired-samples *t* tests indicated that mean giving just before (Bin 5) and just after (Bin 6) the 1-back task did not differ significantly for either group, ps > .05. Furthermore, linear contrasts revealed no effect of Time, $F(1, 99) = 2.94$, $p = .09$, $\eta_p^2 = .03$, 90% CI = [0, .10], or Norm × Time interaction, $F(1, 99) = .56$, $p = .46$, $\eta_p^2 = .006$, 90% CI = [0, .05], for these trials.

Together, these results demonstrate that observing prosocial behavior motivates prosociality not only when group behaviors are provided on a trial-by-trial basis but even after group behaviors are no longer directly observed. Interestingly, we found that participants in the generous norm condition slowly shifted their donations toward the group's donations in both Studies 1 and 2. Although speculative, this "tuning" over time is consistent with recent theories suggesting that conformity comprises a form of reinforcement learning (Falk, Way, & Jasinska, 2012; Klucharev et al., 2009; Nook & Zaki, 2015). Under this account, people imbue consensus with others (i.e., "being on the same page" as others) with positive value, and this value reinforces choices or opinions that bring about consensus. Consequently, agreement-related reward signals would reinforce prosocial behavior in the generous norm condition, leading to steady increases in donations across successive trials so that they approached generous group donation amounts.

By contrast, donations did not change over time in the stingy norm condition. Participants initially gave small donations (US$0.11 on average) before learning group
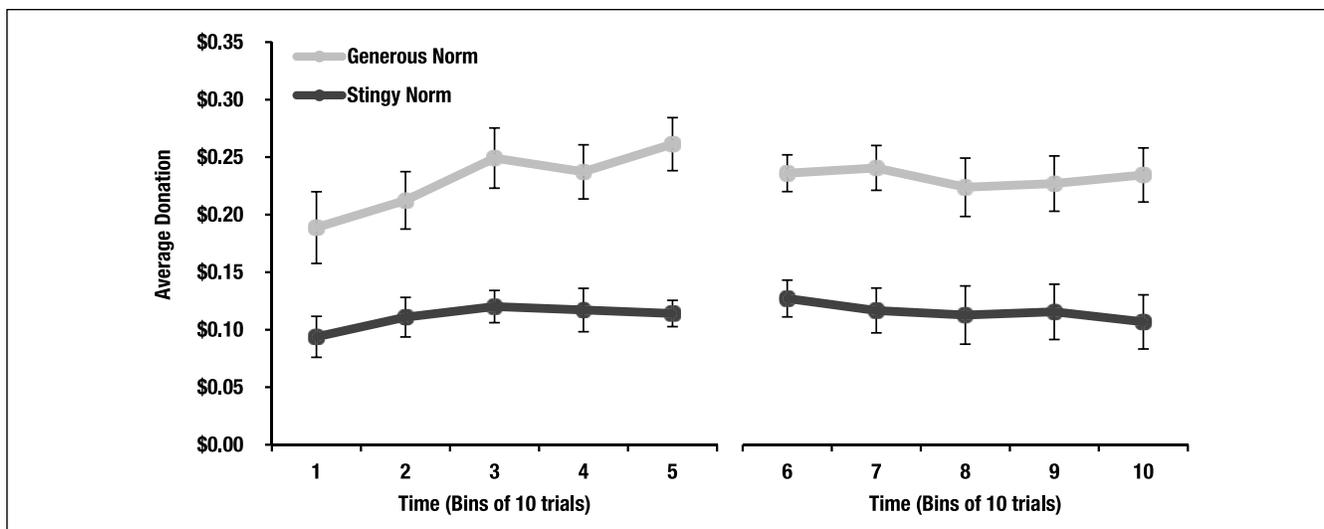
Figure 2. Participants' average donations for each bin of 10 trials, separated by condition in Study 2.
Note. The first five bins comprise trials where feedback of average group donations was displayed, whereas the last five bins did not provide this information. The light gray line represents participants who observed generous donations, whereas the dark gray line represents participants who observed stingy donations. Error bars represent 95% confidence intervals, adjusted for within-subjects comparisons following Morey (2008).

donation amounts. Although this starting point was lower than the average stingy group donation (US$0.25), the range of group donations (US$0.01-US$0.49) was such that participants sometimes learned they had donated as much as or more than the group. Hence, participants in the stingy norm condition learned that their donation amounts were within the range of their group's donations. This mixed feedback—conjoint with participants' motivation to maximize their study earnings—likely explains why participants' donations in the stingy norm condition maintain low levels and did not change over the course of the studies.

Although Study 2 documents the persistence of prosocial norms across only a relatively short delay, these data provide initial evidence that prosocial conformity represents a broader phenomenon than mere imitation. In addition, this study demonstrated that a 50-trial charitable donation task can induce social norms that persist after a delay. We used this method in Study 3 to test for other markers of broad prosocial conformity.

Study 3—Generalization Across Prosocial Behaviors

Study 2 demonstrated that people behave in accordance with prosocial norms even after a delay. We next provided a direct test of the first component of broad prosocial conformity—that prosocial norms generalize across behavior types—by assessing whether observing one prosocial behavior can later prompt a qualitatively different prosocial behavior in a novel context. We modified our paradigm by drawing on past studies of generalized social influence (e.g., Aarts et al., 2004; Higgins & Rholes, 1978; Lundgren & Prislin, 1998). In this

study, participants observed one type of prosocial behavior (i.e., charity donations) and then had the opportunity to behave prosocially on a seemingly unrelated task (i.e., writing empathic and supportive notes to another participant). If prosocial conformity extends beyond the narrow mirroring of behavior, participants who observe generous charity donations should write more empathic and supportive notes than those who observe stingy charity donations.

Method

Participants. Two hundred mTurk participants completed Study 3. Data from 12 were excluded because they had completed Study 1 or Study 2, leaving a final sample of 188 ($n_{generous}$ = 92, n_{stingy} = 96).

Stimuli and procedure. Study 3 was advertised as two separate but sequential studies on monetary decision-making and written communication, respectively. Like Study 2, Study 3 began with a 50-trial charitable donation task.

Participants then completed a second "note-writing" task in which they read a paragraph ostensibly written by another mTurk participant about his or her last month and were asked to write a response to that paragraph. Participants in the *high distress target* condition read a paragraph modeled after a passage Toi and Batson (1982) and Cialdini et al. (1987) used to evoke empathic concern. This target described his or her last month as "really hard" due to a car accident that resulted in a broken leg. The target was clear about his or her need for emotional and instrumental help. Because we believed that this target could potentially induce ceiling-level empathic responses that would not be affected by social

norms, we also included a *low distress target* condition. Participants in this condition read a paragraph that was structurally similar to the high distress note except the target did not clearly express distress or a need for help. Instead, his or her last month was "pretty standard." Although it involved no major problems, there were small events occurring in his or her life that may have aroused subtle emotions. We call this target low distress because detecting and empathizing with this target's feelings requires more effort than empathizing with the strong anguish expressed by the high distress target (see Supplemental Materials for note contents).

These conditions produce a 2 × 2 between-subjects design: (a) generous donation norms followed by a high distress target ($n = 47$), (b) stingy donation norms followed by a high distress target ($n = 48$), (c) generous donation norms followed by a low distress target ($n = 45$), and (d) stingy donation norms followed by a low distress target ($n = 48$).

Participants had 2 min to read the paragraph. A text box then appeared underneath the paragraph, and participants had 4 min to write their response. Participants were explicitly told not to advance to the next screen until the requisite time had passed. After 4 min, the screen automatically advanced.

After writing their note, participants completed ratings (adapted from Fultz, Schaller, & Cialdini, 1988) indicating how much they had felt 12 emotions while reading the target's paragraph (i.e., sad, heavyhearted, distressed, troubled, low, low-spirited, uneasy, disturbed, compassionate, sympathetic, touched, and softhearted). Scales ranged from 1 (*not at all*) to 7 (*extremely*). Following Fultz et al. (1988), we factor analyzed participant responses to these 12 items, revealing two significant factors (eigenvalues > 1), which together accounted for 68% of the variance in emotion ratings. The items associated with sadness and distress loaded on the first factor, rs > .60, and empathy-related emotions loaded on the second factor, rs > .70 (for all loadings, see Supplemental Table 1). These factors are consistent with Davis's (1983) and Batson's (1991) distinction between *personal distress* and *empathic concern*.

We operationalized participants' responsiveness during the note-writing task in three ways. First, we examined participants' *experienced empathy* in response to the target (i.e., their empathic concern and personal distress). Second, we measured the *effort* they put into writing their notes, operationalized as the amount of time spent writing and the word count of their responses. Survey software failed to collect the writing time of one participant, so this participant was removed from the writing time analysis. Third, we measured the *quality* of each note as assessed by independent raters. Four research assistants blind to study methods and hypotheses rated the extent to which each note was "empathic and supportive," "on-task," "recipient-focused," and "author-focused," using a scale of 1 (*not at all*) to 9 (*extremely*). The "empathic and supportive" measure was an average of four items assessing the extent to which the participant was understanding, helpful, supportive, and willing to connect with the target. Our "on-task" measure constituted a single item assessing the extent to which participants followed instructions to respond to the target and did not write about unrelated topics. "Recipient-focused" measured the extent to which the participant's note discussed the experiences of the target, and "author-focused" measured the extent to which participants wrote about their own experiences (see Supplemental Materials for further details). Interrater reliability for these dimensions ranged from .76 to .92. We subjected note quality ratings to a 2 (group norm: high vs. low) × 2 (target type: high vs. low distress) ANOVA. We then conducted planned follow-up *t* tests to compare how generous and stingy norms affected dependent variables of interest within the high distress and low distress conditions.

Finally, we conducted moderated mediation analyses (Hayes, 2012; PROCESS Model 58; 20,000 resamples) to assess whether changes in felt empathy mediated the relationship between group norms and each metric of note quality. Because group norms only shifted empathic feelings for low distress targets (see below), we included Target Distress as a moderator. These analyses assess (a) whether changes in empathic feelings explain why participants who observed generous donations wrote higher quality notes in the low distress target condition, (b) whether this mediation also exists for participants in the high distress target conditions, and (c) whether the strength of this mediation differs significantly depending on target distress.

Results and Discussion

Charity donation task. As in Studies 1 and 2, participants in the generous norm condition donated more (M = US$0.19, SD = 0.22) than those in the stingy norm condition (M = US$0.11, SD = 0.13), $F(1, 186)$ = 7.70, p = .006, η_p^2 = .04, 90% CI = [.007, .09].

Experienced empathy. Factor scores indicated that participants felt more empathic concern for the high distress target (M = 0.39, SD = 0.76) than the low distress target (M = −0.40, SD = 1.06),[1] $F(1, 184)$ = 34.27, p < .001, η_p^2 = .16, 90% CI = [.08, .24]. Participants also reported feeling more personal distress while reading about the high distress target (M = 0.47, SD = 0.86) than the low distress target (M = −0.48, SD = 0.90), $F(1, 184)$ = 54.31, p < .001, η_p^2 = .23, 90% CI = [.14, .31]. Although Group Norm did not affect empathic experiences overall, ps > .4, Norm did interact with Target Type in predicting empathic concern, $F(1, 184)$ = 5.72, p = .02, η_p^2 = .03, 90% CI = [.003, .08]. In particular, participants in the generous, as compared with stingy, norm condition reported higher levels of empathic concern for the low distress target at a trending level of significance, $t(91)$ = 1.92, p = .06, d = 0.40, 95% CI = [−0.02, 0.82]. Norms did not affect empathic concern for the high distress target, $t(93)$ = −1.42, p = .16, d = −0.29, 95% CI = [−0.70, 0.12] (Figure 3a).
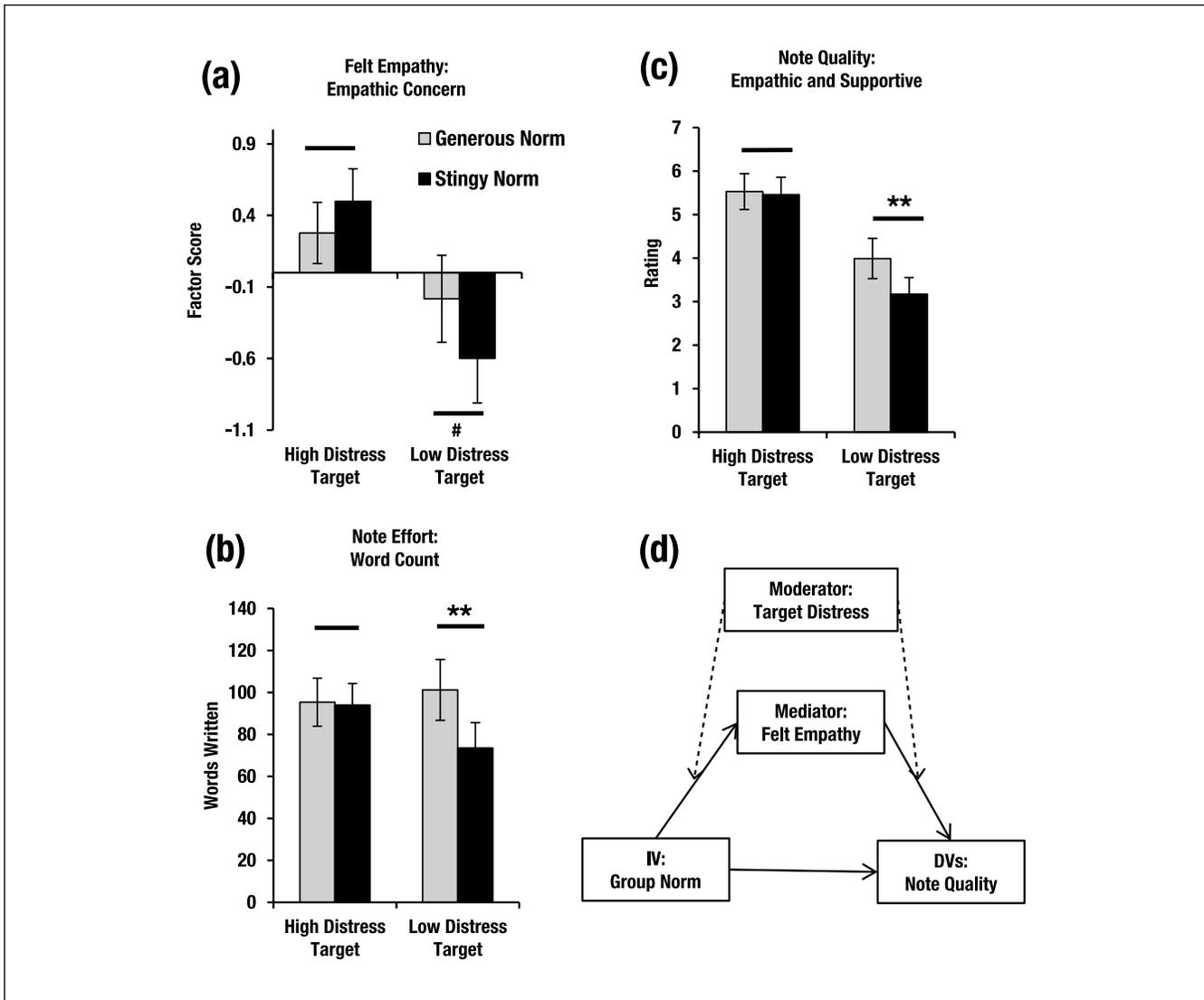
Figure 3. Mean values for three dependent variables of interest in Study 3.
Note. (a) Participants' reported empathic concern for the target, (b) the length (word count) of response notes, and (c) raters' perceptions of how empathic and supportive notes were. For all panels, light gray bars represent participants who observed generous donations, whereas the dark gray bars represent participants who observed stingy donations. (d) Moderated mediation model. Group norms are hypothesized to influence note quality *via* participants' feelings of empathy. However, Target Distress moderated this relationship such that the mediation was stronger for low distress targets than high distress targets. Empathic concern values are z scored, so negative scores simply indicate less empathy relative to the sample mean. Error bars represent 95% confidence intervals. IV = independent variable, DVs = dependent variables.
$^{\dagger}p = .06$. $^*p > .05$. $^{**}p < .01$.

Note effort. Participants in the generous norm condition wrote significantly longer notes ($M_{generous} = 98.28$ words, $SD_{generous} = 43.69$, vs. $M_{stingy} = 83.80$ words, $SD_{stingy} = 39.86$), $F(1, 184) = 5.83$, $p = .02$, $\eta_p^2 = .03$, 90% CI = [.003, .08], and showed a trend for spending more time writing ($M_{generous} = 234.58$ s, $SD_{generous} = 31.16$, vs. $M_{stingy} = 222.98$ s, $SD_{stingy} = 49.71$), $F(1, 183) = 3.65$, $p = .06$, $\eta_p^2 = .02$, 90% CI = [0, .06], than those in the stingy norm condition. There were no main effects of Target Type on Note Effort, $ps > .2$. However, Group Norm also interacted with Target Type to predict word

count, $F(1, 184) = 4.79$, $p = .03$, $\eta_p^2 = .03$, 90% CI = [.001, .07]. Consistent with the empathic concern data, participants in the generous, as compared with stingy, norm condition wrote longer notes to the low distress target, $t(91) = 2.97$, $p = .004$, $d = 0.62$, 95% CI = [0.19, 1.04], but not the high distress target, $t(93) = 0.18$, $p = .86$, $d = 0.04$, 95% CI = [−0.38, 0.45].

Note quality. Participants wrote more empathic and supportive notes when they had previously encountered a generous donation norm ($M = 4.78$, $SD = 1.66$) as compared with a

stingy donation norm (M = 4.32, SD = 1.76), $F(1, 184)$ = 4.69, p = .03, η_p^2 = .03, 90% CI = [.001, .07]. Participants in the generous norm condition also wrote more on-task and author-focused notes, ps < .05. Unsurprisingly, notes to the high distress target were rated as more empathic and supportive, recipient-focused, author-focused, and on-task than notes to the low distress target, ps < .005. However, these effects were qualified by a significant Norm × Target interaction for how on-task notes were, $F(1, 184)$ = 5.82, p = .02, η_p^2 = .03, 90% CI = [.003, .08], and a trending interaction for how empathic and supportive notes were, $F(1, 184)$ = 3.36, p = .07, η_p^2 = .02, 90% CI = [0, .06]. To decompose these interactions, we compared ratings for notes to each target as a function of group norms. Generous norms significantly increased the empathy and supportiveness, $t(91)$ = 2.78, p = .007, d = 0.58, 95% CI = [0.15, 1.00], and on-task focus, $t(91)$ = 2.69, p = .008, d = 0.56, 95% CI = [0.13, 0.98], of responses to the low distress target, but they did not affect notes to the high distress target, ps > .7.

Moderated mediation analyses. We first tested for correlations between the proposed mediator (felt empathic concern) and dependent variables (the four measures of note quality). Empathic concern correlated positively with how empathic and supportive notes were rated, both across the entire sample and within the generous and stingy norm conditions. The same pattern emerged for "on-task" ratings. However, empathic concern correlated with recipient focus across all participants but not within conditions, and it correlated with author focus only within the high distress target condition (see Supplemental Materials).

Increased empathic concern mediated the relationship between group norms and raters' perceptions of how empathic and supportive notes were *only* for participants who read about the low distress target, B = .22, 95% CI = [.007, .54]. The indirect effect is deemed significant because the 95% CI does not include 0. However, this mediation did not emerge for the high distress target condition, B = −.16, 95% CI = [−.46, .05], underscoring the fact that Target Distress significantly moderated the strength of this mediation, 95% CI = [−.78, −.06] (Figure 3d). A similar result emerged for ratings of how on-task notes were. Empathic concern significantly mediated the relationship between group norms and increased on-task ratings only for the low distress target, B = .21, 95% CI = [.01, .62], not the high distress target condition, B = −.11, 95% CI = [−.31, .03]. Target Distress again significantly moderated the strength of this mediation, 95% CI = [−.74, −.06]. No significant mediation or moderated mediation effects emerged for ratings of recipient focus or author focus (all 95% CIs include 0). In addition, modeling participants' experiences of personal distress as a mediator instead of empathic concern returned no significant mediation or moderated mediation effects (all 95% CIs included 0).

In sum, participants who had observed others' generous, as compared with stingy, charitable donations (a) felt more empathic concern for social targets (significant interaction between Group Norm and Target Type, driven by a trending simple effect of Group Norm on empathy felt in response to the low distress target); (b) wrote notes to these targets that were longer (significant main effect of Group Norm and significant interaction with Target Type, driven by a simple effect of Group Norm on notes to the low distress target); (c) spent more time writing notes (trending main effect of Group Norm); and (d) wrote notes that were more empathic and supportive (significant main effect of Group Norm and tending interaction with Target Type, driven by a significant simple effect of group norm on notes to the low distress target). In addition, mediation analyses suggest that participants wrote more empathic, supportive, and on-task notes because group norms increased their empathic concern for low distress targets. These results suggest that observing prosocial norms motivates individuals to act kindly even in novel contexts, potentially by increasing participants' tendency to empathize with others. Hence, prosocial conformity can generalize across behavior types, from charitable donations to social support.

Interestingly, although group norms affected writing time for both the high distress and low distress targets, the effect of group norm on word count, empathic concern, and note quality only emerged for the low distress target. In addition, Target Type moderated the extent to which empathic concern mediated the relation between group norms and note quality. There are at least two explanations for these interactions. First, these results may arise because high distress targets generated uniformly high levels of empathic concern and prosociality for all participants, leaving little variance to be explained by the effects of social norms. Supporting this interpretation, Levene's tests of equality revealed that note word count and empathic concern in the high distress target condition varied less than those in the low distress target condition, ps = .02 and .08, respectively. Second, there is substantial evidence that people are more likely to conform to group norms in contexts that are relatively ambiguous. For example, people are more likely to conform to the group's incorrect response in Asch's (1951) line judgment task when lines are displayed only for 3 s than when they are displayed for as long as participants need (Deutsch & Gerard, 1955).

In addition, people show stronger conformity to a group's attractiveness ratings of faces when the attractiveness of those faces is ambiguous, rather than clearly attractive or unattractive (Huang, Kendrick, & Yu, 2014b; Klucharev et al., 2009). These and other findings suggest that people rely more on social norms when they are unsure about what behavior is "correct" in a given context (see also Hamm & Hoving, 1969; Wiener, 1958; Wiener, Carpenter, & Carpenter, 1957). In our paradigm, empathizing with and responding to a person who is not obviously distressed is more difficult than doing so for a person who clearly requests support.

As Zaki (2014) described, the motivation to approach empathy is guided by one's context, and these data demonstrate that social norms more strongly impacted how much effort participants invested in detecting and responding to the subtle emotions experienced by the low distress target compared with the clearly negative emotions expressed by the high distress target. Hence, empathizing with low distress targets may be a more sensitive test of whether prosocial conformity can generalize across behaviors, given the greater emotional ambiguity of this social situation. Future work should explore which of these factors contribute to boundary conditions of prosocial conformity. However, Study 3 provides initial evidence that prosocial conformity exhibits a key characteristic of broad conformity by generalizing from one behavior to another and across the domains of behavior and emotion.

Study 4—Empathic Conformity

Results from Study 3 demonstrate that prosocial conformity generalizes across behaviors, potentially by shaping empathic concern. This finding provides preliminary support for our second component of broad prosocial conformity—generalization across psychological domains. In Studies 4 and 5, we pursued this line of reasoning further. Study 4 tested whether observing others' empathy modulates one's own empathic responses. In essence, we explored whether prosocial conformity can take the form of *empathic conformity* in which people tune their feelings of empathy to match group norms. Consequently, we tested whether people would experience stronger empathy after observing others report high versus low empathy.

Method

Participants. Three hundred ninety-nine mTurk participants completed Study 4 for a US$0.50 payment. We excluded 57 participants because they had completed another study in this series, leaving a final sample of 342.

Stimuli and procedure. Participants believed they were rating stimuli we would use in future experiments. Participants read a series of vignettes and rated how much empathy they felt for the individuals in each vignette. We constrained participants' interpretation of the term "empathy," by defining it at the beginning of the study as "understanding of and concern for the individual(s) in the paragraph." Participants used a 100-point sliding scale to rate their empathic responses while the vignette was on-screen. As in Studies 1 to 3, participants were told that after providing each rating, they would see a number that represented the average rating provided by the last 100 participants.

Participants were randomly assigned to one of four conditions in a 2 (group norm: empathic vs. non-empathic) × 2 (target distress: high vs. low) factorial design. Participants in

the *high distress target* condition rated 24 vignettes that described people suffering in negative emotional scenarios. For instance, one story described a girl named Shelley who had recently applied to Oxford and had dreamed of going there all her life. However, Shelley receives a rejection letter and runs into her room sobbing (see Bruneau, Dufour, & Saxe, 2013, for other examples and norming information). Participants in the *low distress target* condition rated 24 control vignettes that were thematically similar to those of the high distress target condition but lacked explicit negative content (also from Bruneau et al., 2013). For example, in the control story for the above stimulus, the letter merely confirmed that Oxford had received Shelley's application. Similar to Study 3, we call this a low distress note because the target's feelings are less clear. That said, the characters in low distress vignettes could nonetheless be construed as experiencing *some* emotions. For instance, Shelley could feel anxious about her application. Thus, the key difference between these vignette types was that affect in the high distress cases was more obvious than the affect of low distress targets. Consequently, detecting affect in low distress targets likely required more effort.

As in Studies 1 to 3, Group Norm was manipulated by creating two normal distributions of supposed "average group ratings," one high (*empathic; M* = 75 *SD* = 10, range = 56-93) and the other low (*non-empathic, M* = 25, *SD* = 10, range = 7-44). This effectively produced four conditions: (a) an empathic group norm for high distress targets (*n* = 91), (b) a non-empathic group norm for high distress targets (*n* = 81), (c) an empathic group norm for low distress targets (*n* = 85), and (d) a non-empathic group norm for low distress targets (*n* = 85).

We averaged participants' ratings across all 24 trials and analyzed these average ratings using a 2 (group norm: empathic vs. non-empathic) × 2 (target distress: high vs. low) ANOVA.

Results and Discussion

Participants in the empathic norm condition reported experiencing more empathy while reading vignettes (*M* = 65.18, *SD* = 18.27) than those in the non-empathic norm condition (*M* = 40.79, *SD* = 18.96), $F(1, 338) = 169.14$, $p < .001$, $\eta_p^2 = .33$, 90% CI = [.27, .39]. Participants also reported feeling more empathy while reading high distress vignettes (*M* = 60.88, *SD* = 19.43) than low distress vignettes (*M* = 45.70, *SD* = 22.33), $F(1, 338) = 62.74$, $p < .001$, $\eta_p^2 = .16$, 90% CI = [.10, .21]. Interestingly, there was a significant Group Norm × Target Distress interaction such that empathic responses to low distress targets were more strongly influenced by group norms than responses to high distress targets, $F(1, 338) = 5.72$, $p = .02$, $\eta_p^2 = .02$, 90% CI = [.002, .05] (Figure 4). We also conducted an analysis of ratings across time by averaging trials into six bins of four trials each. This analysis revealed changes over time similar to what was
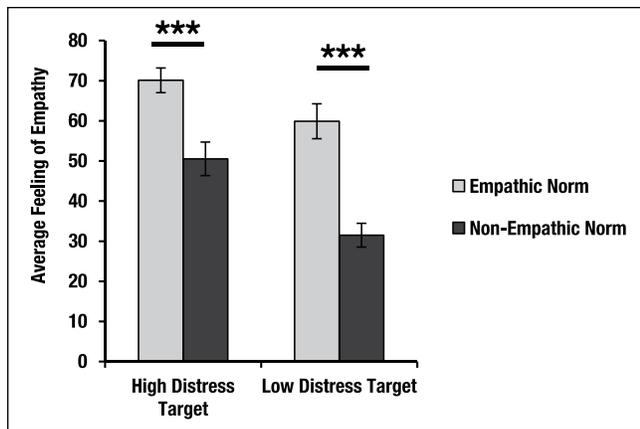
Figure 4. Participants' average empathy ratings, separated by condition in Study 4.
Note. Error bars represent 95% confidence intervals.
***$p < .001$.

found in Studies 1 and 2: Participants shifted their ratings toward the group's ratings, unless their initial ratings were already within the group's range of ratings (see Supplemental Materials).

These results demonstrate that, in addition to shifting prosocial behavior, group norms shift feelings of the prosocial emotion of empathy. People reported feeling more empathy for social targets when they believed their peers experienced high, as compared with low, levels of empathy. As in Study 3, we also found that group norms more strongly shifted responses to low distress targets than high distress targets: Participants were more willing to magnify the subtle emotions expressed by the low distress target when doing so was in line with social norms. This result further supports the notion that social norms exert their strongest effects on empathy when the target's need is ambiguous. Given that Study 3 showed this effect by exposing participants to a group's prosocial *behaviors*, whereas the induction in Study 4 involved observing prosocial *emotions*, this replication supports the broader hypothesis that prosocial norms operate similarly across both behavior and affect. Study 4 demonstrates that observing others' empathic reactions can shape one's own experiences of empathy (see also Tarrant et al., 2009, who indirectly invoke a descriptive empathic norm). Thus, social desirability—in the form of descriptive norms—can augment or diminish one's motivation to engage empathically with social targets (Zaki, 2014).

Study 5—Prosocial Norms Across Behavior and Affect

In Studies 1 to 4, we found that observing others' prosocial behavior increases one's tendency to act prosocially, both in the same context and in novel contexts. We also found that either observing others' prosocial behavior or their empathic feelings can increase one's empathy for social targets. In

fact, results from Study 3 suggest that prosocial norms generalize from one behavior to another *via* empathic feelings.

In Study 5, we extended these findings in two crucial ways. First, we examined whether merely observing others' empathic responses motivates prosocial behaviors. If so, this would unite the theoretical perspectives of the empathy-altruism hypothesis (Batson, 2011; Batson et al., 1991) with the theory of motivated empathy (Zaki, 2014) by demonstrating that prosociality generalizes not only across different behaviors but also across domains: from the *emotions* of a group to the *actions* of an individual. Second, Study 5 addressed a potential alternative explanation of Study 3. In that study, participants who observed generous, as compared with stingy, donations donated more money to charity and subsequently wrote more supportive notes to targets in a novel setting. One possible explanation for this effect is that participants' own donations in the charity donation task established a prosocial baseline for their behavior. Hence, later prosociality in the note-writing task may have stemmed from participants' desire to avoid cognitive dissonance (Festinger, 1957/1962) or maintain consistency (Cialdini, Trost, & Newsom, 1995), rather than from broad prosocial conformity. Study 5 circumvented this alternative explanation by examining individuals' prosocial behavior after they *passively observed* group responses without performing any prosocial behavior themselves.

As in Study 4, participants read vignettes about a stigmatized out-group (homeless people) and, after each vignette, they were shown a group's ostensible average empathic rating. Critically, participants did not rate the vignettes while they were reading them. Following this empathic norm induction, participants had the opportunity to donate some or all of their bonus to a homeless shelter. We selected homeless people as our social target because people often fail to empathize with this extreme out-group (Fiske, Cuddy, Glick, & Xu, 2002; Harris & Fiske, 2006). Hence, it would be particularly compelling to show that group norms modulate both empathic and prosocial responses to such a stigmatized group.

Method

Participants. One hundred five participants completed Study 5 on mTurk. Survey software failed to collect the donation decision of three participants, and an additional 20 participants had completed another study in this series. This left a final sample of 82 participants. Participants were given a base payment of US$0.50 plus up to a US$0.50 bonus, depending on their behavior in the donation task.

Stimuli and Procedure. As in Study 4, participants were informed that we were developing study materials. To explain why they would not rate the stimuli and instead merely observe group ratings, participants were told that a number of other participants had previously rated a series of

vignettes about homeless people and we were now assessing how memorable these stimuli were. Thus, they should simply read each vignette and observe the group's rating as there would be a memory test at the end of the survey. Empathy was defined for participants as in Study 4, and participants were told that the empathy scale ranged from 0 (*no empathy*) to 100 (*extreme empathy*).

Participants then read 24 negative vignettes about homeless people, which we constructed to resemble those of Bruneau et al. (2013). Vignettes are provided in the Supplemental Materials. Ostensible average group empathy ratings were displayed after each vignette and these were again manipulated across subjects to create empathic (*n* = 39) and non-empathic (*n* = 43) norms using the same distributions as Study 4. To keep participants engaged in the task, we asked them to use a slider to report on the average group rating given for each vignette immediately after it was shown. After completing all 24 trials, participants completed a memory test in which they read two vignettes and used a slider to recall the average group rating given for those vignettes. Participants were then told about the InnVision Shelter Network, an organization that provides housing, resources, and counseling for homeless individuals in Northern California. Participants were given a US$0.50 bonus on top of their base payment, and they were told they could give as much or as little of this bonus as they wished to the InnVision Shelter Network. Participants entered how much they would like to donate into a text box. Participants' donations were anonymous, minimizing reputational incentives to give (Harbaugh, 1998).

We tested whether group norms influenced donations using an independent-samples *t* test. As in previous studies, we actually carried out participants' donations.

Results and Discussion

Participants in the empathic norm condition donated more to the homeless charity (*M* = US$0.23, *SD* = 0.20) than those in the non-empathic norm condition (*M* = US$0.13, *SD* = 0.17), $t(80) = 2.50$, $p = .01$, $d = 0.55$, 95% CI = [0.10, 1.01] (Figure 5a). Interestingly, this effect was driven by the proportion of participants who donated all versus none of their bonus (Figure 5b). A greater proportion of participants who observed empathic group norms gave their entire bonus (30.8%) than none of their bonus (25.6%), whereas a greater proportion of participants who observed non-empathic group norms gave none of their bonus (44.2%) than their entire bonus (11.6%).

Observing a group's empathic responses to a stigmatized out-group influenced whether participants behaved prosocially toward that group. This provides an especially potent demonstration of the breadth of prosocial conformity, as observing others' empathic *emotions* motivated prosocial *actions*. Consequently, these data provide empirical support
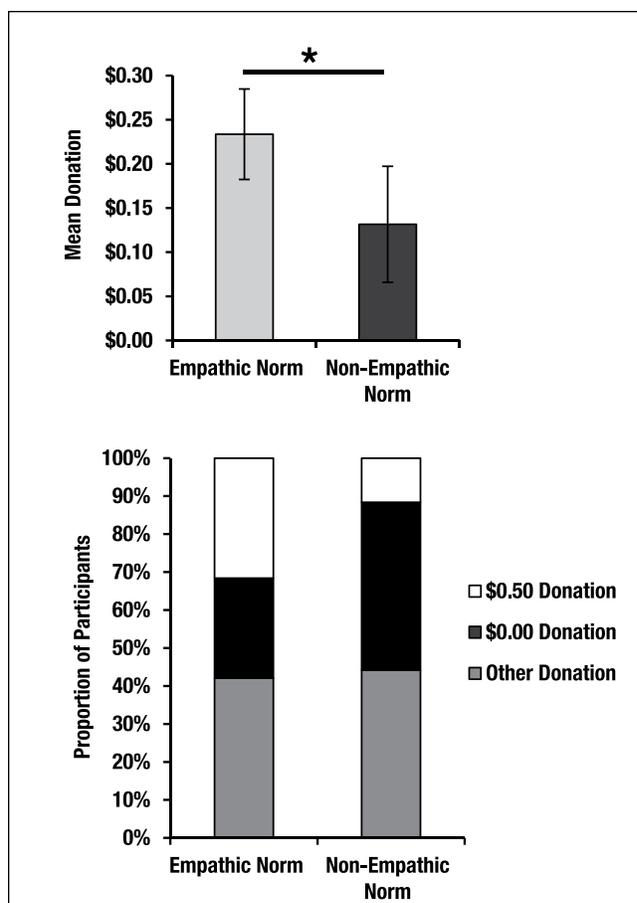

Figure 5. Participants' donations to a homeless shelter in Study 5.
Note. (a) Mean donations after reading vignettes about homeless individuals and observing a group's empathic (light gray column) or non-empathic (dark gray column) responses. (b) Proportion of participants in each condition who donated all of their US$0.50 bonus (white), none of their US$0.50 bonus (black), or some intermediary amount (gray).
*p < .05.

for the second component of broad prosocial conformity: Norms generalize across psychological domains.

It is worth noting that the bonus for this task was equal to participants' entire study earnings, meaning that 31% of participants in the empathic norm condition sacrificed half of their potential income to support the homeless, whereas only 12% of participants in the non-empathic norm condition did the same. As such, this study extends the results of Study 4 by demonstrating that people do not just report feeling more empathy when they observe others' empathic ratings, but they also *act* on this empathy by helping those in need. In addition, neither cognitive dissonance nor a desire for internal consistency can explain this result. Participants did not rate the vignettes or perform any other prosocial behavior before the donation decision. Hence, the difference in donation behavior across conditions can only be attributed to the empathic group ratings. As such, this study design addresses the potential confound of Study 3 and

supports the interpretation that these results illustrate the breadth of prosocial conformity.

General Discussion

Results from five studies illuminate two novel aspects regarding the breadth of prosocial conformity. Observing prosociality affects prosocial decision-making across behavior types and psychological domains. Not only did participants shift their behavior to match a group's prosocial actions (Study 1), but they also persisted in doing so without continued feedback about that group's behavior (Study 2). Furthermore, participants who observed a group engage in one prosocial action (charitable donation) evinced prosocial behavior in a novel context (note-writing). Participants who observed generous charity donations wrote longer and more supportive notes to other participants than those who observed stingy donations, especially when these participants did not explicitly demand support (Study 3). In addition, prosocial conformity does not require observing others' prosocial *behaviors*. Observing generous charitable donations increased how much empathy participants felt for another person (Study 3). Learning that a group tends to feel strong or weak empathy for others influenced one's own empathic responses to those individuals (Study 4), and merely observing empathic or non-empathic responses to homeless individuals influenced how much money participants donated to a homeless shelter (Study 5).

These results extend our current understanding of prosocial conformity by showing that, like other forms of social influence, prosocial norms can transcend the immediate imitation of others' low-level behaviors. The influence of prosocial conformity extends from action to action (Studies 1-3), action to emotion (Study 3), emotion to emotion (Study 4), and emotion to action (Study 5). As such, observing prosocial behavior in one context can influence decision-making in novel situations, even crossing the domains of affect and behavior. As outlined in the introduction, these results converge with prior work showing that peer influence can have deeper impact than the transient shifting of public opinions and behaviors (e.g., Higgins & Rholes, 1978; Nook & Zaki, 2015; Prehn et al., 2014; Zaki et al., 2011). Similarly, this work expands on classic findings concerning the relation between empathy and prosocial behavior (e.g., Batson & Ahmad, 2001; Batson & Moran, 1999; Davis et al., 1999; Schroeder, Dovidio, Sibicky, Matthews, & Allen, 1988; Toi & Batson, 1982) by demonstrating that prosocial behavior can emerge simply by *observing empathic norms*.

These findings concord with the emerging notion that empathy is not an automatic and involuntary response to others' emotions. Rather, empathy is a *motivated* process. Zaki (2014) describes the motives that drive people to approach or avoid empathy and asserts that the social desirability of empathy in a given context can motivate empathic engagement. Descriptive norms often render a particular behavior or experience desirable and should likewise influence empathic approach motives. Consistent with this idea, we found that informing participants of average group donations or empathy ratings shifted their empathic responses to others. Expanding on Study 3, future work could explore whether observing prosocial behavior influences neural responses to others' emotions in regions commonly implicated in empathic processing (see Zaki & Ochsner, 2012, for a review). Such research would provide converging evidence for broad prosocial conformity at additional levels of analysis (e.g., neuroimaging) and could potentially explore whether social norms shift empathic responses by motivating increased affect sharing, mentalizing, or both of these sources of empathy.

From motivational and affective perspectives, prosocial conformity may provide people with at least two types of value. The first is social agreement and integration. Previous research has found that convergence with one's group—even over simple opinions or behaviors—constitutes a sign of social integration that is experienced as rewarding (Baumeister & Leary, 1995; Klucharev et al., 2009; Nook & Zaki, 2015). Our data (especially from Studies 1 and 2) are consistent with this notion. We find that people tune their prosocial behaviors to fit group norms over time, supporting the role of a reward learning mechanism for social influence (see Klucharev et al., 2009). Second, prosocial actions can produce a hedonic "warm glow" (Andreoni, 1990). Prosocial behavior engages the same value-related neural structures as those associated with conformity (Zaki & Mitchell, 2011, 2013). As such, prosocial conformity might provide individuals with a "double dose" of positive affect by coupling the value of interpersonal alignment with the warm glow of prosociality. Future research should more closely examine the interplay between these sources of positive hedonic experiences.

One limitation of these studies concerns the potential role of anchoring in explaining our results (Tversky & Kahneman, 1974). It is possible that participants behaved more generously and empathically in generous or high empathy conditions only because they were shown larger numbers than participants in stingy or low empathy conditions. Reading larger or smaller numbers could have "anchored" participants' responses on these values, thereby creating systematic biases across groups. That said, there are three key reasons to believe that anchoring alone cannot explain our results. First, anchoring and adjustment cannot explain the generalization of prosocial norms to non-numeric dependent variables that we utilize in Study 3. Exposure to large numbers would not lead individuals to write long empathic notes, unless these numbers were thought to represent something meaningful about prosocial norms.

Second, an anchoring account fails to explain why the distress of participants' notes would moderate the anchoring and adjustment process, as we observe in Studies 3 and 4. If participants were merely adjusting from numerical anchors, it is unclear why would they do so more when the target's need was ambiguous rather than obvious.

Third, a number of studies using social norms inductions have explicitly tested for the role of anchoring (e.g., Edelson, Sharot, Dolan, & Dudai, 2011; Huang et al., 2014b; Klucharev et al., 2009; Spitzer, Fischbacher, Herrnberger, Grön, & Fehr, 2007). These studies consistently find that participants do not conform to "norms" that are said to be randomly generated by computers. Consequently, we believe the influence of anchoring on our findings is minimal and cannot account for the generalization observed in Study 3. However, future studies of prosocial conformity should continue exploring this issue by explicitly controlling for the influence of anchoring, using non-numerical induction methods, or collecting non-numerical dependent variables.

In addition, the interactions between group norm and target distress in Studies 3 and 4 could be interpreted as evidence that exposure to prosocial norms led participants to be insensitive to others' distress. This is because the difference between the empathy participants experienced in response to high versus low distress targets was greater for participants who previously observed prosocial norms than those who previously observed non-prosocial norms. However, we do not believe that this interpretation concords with the other dependent variables of Study 3, nor the findings of Study 5. Instead, this pattern likely reflects the fact that our generous norm condition shifted prosocial responses to low distress targets. Although this pattern is indistinguishable from the "insensitivity" interpretation based on the results of Study 3 alone, Study 5 suggests that these effects are indeed carried by the prosocial norm condition. In this study, participants who observed strongly empathic group ratings of homeless people in distress were not "desensitized" to this distress, as a sizable number donated their entire bonus to help this population.

Although our studies suggest that there is a strong connection between feelings of empathy and prosocial behavior (Toi & Batson, 1982), future research could explore whether prosocial conformity also hinges on other motivators of prosocial behavior. For example, would people behave more prosocially if they observed others receiving reputational acclaim for their prosocial actions (Harbaugh, 1998)? Alternatively, would observing others' prosociality-induced hedonic "warm glow" motivate prosocial decision-making (Andreoni, 1990)? Researchers could potentially use the paradigms described here as a platform for investigating the underlying *social* motivators of prosocial behavior.

Note that it is unlikely that *all* prosocial conformity occurs at the deep level we document in Studies 3 and 5. Some behaviors—and some contexts—almost certainly spur individuals to match others' low-level prosocial behaviors without generalizing this behavior across contexts. A curious example of this phenomenon comes from research on "moral self-licensing" (Kouchaki, 2011; Merritt, Effron, & Monin, 2010), which shows that observing others' positive behaviors can lead people to behave *less* prosocially (e.g., observing non-prejudicial hiring decisions can actually license people to express *more* prejudiced opinions).

Although our data suggest that people behave prosocially after viewing others' prosocial behavior, these studies suggest that the opposite can also occur. It is likely that moral self-concept and group identification play critical roles in shaping how group behaviors influence individual behaviors, but future research should specifically explore these moderating factors. This leads to the larger point that greater focus should be given to the boundary conditions of prosocial conformity. As noted in the discussion of Study 3, we found only a weak general effect of prosocial norms on note-writing when the note's target was explicitly in need. Future research could dissect how negative affect, explicit need, and ambiguity each influence the generalization of prosocial conformity.

A final direction for future research relates to the application of our findings. The results presented here can guide the use of social norms as "nudges" to promote positive and healthy behaviors (Goldstein et al., 2008; Robinson, Fleming, & Higgs, 2013; Shang & Croson, 2009; Thaler & Sunstein, 2008). For instance, our results suggest that such interventions may imbue norms that inspire individuals to act prosocially across time and contexts. However, this line of work must further investigate the duration over which prosocial norms persist. The studies presented here suggest that they last at least a short time, but those interested in applying social norms would need to determine their durability over longer time periods. Prior research shows that social norms in similar paradigms persist for days, months, or even years, but the extent to which *generalization* persists is unknown (Huang et al., 2014a; Izuma & Adolphs, 2013; Shang & Croson, 2009; see also Graziano & Habashi, 2010, who discuss the regulatory mechanisms underlying helping motives that unfold over time).

Our results also imply that an "active ingredient" of prosocial conformity is the belief that one's group *empathizes* with a social target. Hence, interventions to increase prosociality (even toward ostracized out-group members) may be most effective when they instill the notion that one's in-group feels strong empathy for an out-group. Future work—which could adapt our own methods or classic methods (e.g., Batson & Moran, 1999; Schroeder et al., 1988; Toi & Batson, 1982)—should explore just how far simple descriptive norms concerning a group's prosocial and empathic behavior can push real-world decision-making.

In all, our work sheds new light on prosocial conformity, suggesting that it may be a broader phenomenon than is often assumed. These findings open new vistas for basic research on the intersection of social influence and prosociality while suggesting ways to refine interventions for promoting prosocial behavior.

Acknowledgments

Declaration of Conflicting Interests

Funding

Note

1. Experienced empathy measures are *z* scored; negative values indicate they fall below the sample mean.

Supplemental Material

The online supplemental material is available at http://pspb.sage-pub.com/supplemental.

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