Praise from Peers Promotes Empathetic Behavior*

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Abstract

Empathy is a powerful tool for shaping and shaping policy preferences, encouraging cooperative or inclusionary behavior (Adida, Lo and Platas, 2018), and warming attitudes towards others. Yet, recent work has shown that engaging in empathy is costly. We investigate the magnitude of those costs and their origins—whether emotional or cognitive—and propose and test an intervention designed to lower the barriers to empathy. We begin by verifying the cost of empathy and harnessing an incentive-compatible reservation wage design to estimate a monetary price to the cost in a first study. We then propose *peer praise* as an effective and light-touch approach to encourage empathetic behavior in a second study, developing an intervention that uses naturalistic peer praise. Our third study uses a randomized survey experiment to demonstrate the efficacy of peer praise in promoting empathy. In our last two randomized survey experiments, we investigate mechanisms and provide evidence that peer praise encourages empathy through an affective pathway by boosting positive emotions. Our discussion centers on findings related to the scope of our intervention's efficacy and its broad success in motivating empathy across ideological and partisan categories.

*The data and methods described in this paper can be accessed at : `https://github.com/adelinelo/Praise-and-Empathy`. We are grateful for the comments and feedback of Deborah Kanter, Michelle Schwarze, and the participants of the: Vanderbilt Comparative Politics Workshop, UW-Madison MAD-EPW, and Empathy in Politics MPSA workshops. All remaining errors are our own.

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1 Introduction

Empathy—the act of taking the perspective of and understanding others' experiences (Decety and Cowell, 2014; Waal, 2012)—is a powerful tool for shaping and changing policy preferences, encouraging cooperative or inclusionary behavior, and warming attitudes towards others. It has both cognitive and affective components, with one compelling model suggesting that the emotional component captures the instinct to avoid or engage in empathy and the cognitive components involved in actually thinking through others' experiences (sometimes referred to as "perspective taking," Zaki, 2014). From scores of studies across the social sciences, we have learned a fair amount about the mechanics of empathy. We understand, for example, that a huge determinant of empathy is socially determined by group categorization, meaning that it is easier and more automatic for individuals to generate empathy towards their own group (even when the group is determined by a flip of the coin; Stürmer et al., 2006). We've also learned that empathy can lead to prosocial behaviors: e.g., taking the perspective of others reduces prejudice, increases helping behavior and has the potential to improve attitudes about even heavily stigmatized outgroups (Batson et al., 1997; Shih et al., 2009). In the context of persistent internecine violence—e.g., among Israelis and Palestinians, a particularly tough case for the importance of empathy—seeing the world through the eyes of others leads to greater support for humanitarian aid for the "other" side (Gubler, Halperin and Hirschberger, 2015). Differences in the desire and proclivity to engage in empathy also map on to political divides; both in the U.S. and across the world, liberals are more interested in empathy but both liberals and conservatives find it difficult to engage in empathy with political outgroups (Hasson et al., 2018; see also Simas, Clifford and Kirkland, 2020).

Despite its importance across fields, two significant gaps in our understanding remain: why is empathy costly and—given its normative and instrumental value—what can we do to *encourage* greater empathy? On the latter question, we have evidence that costly perspective-taking interventions can yield benefits, but that only begs the question of how one might encourage greater "approach to empathy" in the first place. It is this first part of empathy, generally seen as more "affect-laden" (see discussion in Sirin, Valentino and Villalobos, 2017, 428), where we make our contribution. We field five studies using an incentive-compatible experimental design that allows us to verify a general preference towards avoiding empathy, propose and test a light-touch intervention designed to encourage empathy through the use of peer praise and investigate the affective mechanisms through which praise works. We begin by estimating the preference towards empathy

using a choice task in which online respondents make decisions about whether to empathize with or simply describe the appearance of randomly presented photos of peoples' faces, and find that the empathy task was 39.7% less likely to be chosen by respondents than the descriptive task. Modifying the choice task to include a wage-elicitation stage, we estimate that the empathy task further required roughly a 10% premium in wages compared to the descriptive task. Our subjects also reported that empathy felt more demanding, more costly and difficult and made them more anxious compared to pure description.

Our main contribution comes in proposing and testing an intervention to overcome the aversion we identify and encourage empathetic behavior. Given the natural connection between empathy and affect[1]—empathy is fundamentally "an affective response" (Hoffman, 1984, 103)—we propose the use of peer praise: praise because of its established ability to trigger positive emotions (Delin and Baumeister, 1994) and "peer" praise given the established benefits of peer influence across many domains (Barry and Wentzel, 2006). We show across several studies that real peer praise for empathy—elicited in our Study 2—increases the odds of respondents choosing to engage in empathy by 20% compared to the control group.

Lastly, we used three separate randomized experiments to examine the mechanisms through which peer praise works to encourage empathy. The failure of our placebo treatment—peer praise for objective description—to impact behavior helps us to rule out explanations based on norms (changing beliefs about socially valued behavior). Instead, we focus on the "cost/benefit" family of mechanisms which suggest that praise might encourage empathy through lowering the perceived or actual costs to respondents. Given the link between praise and positive emotion, our Studies 4 and 5 focus on the link between praise and happiness, and happiness and empathy. Ultimately, we find support across both studies for praise operating through an emotional pathway (happiness) to encourage greater empathy. We conclude with a discussion focusing on the scope conditions to the effectiveness of our peer praise intervention, highlighting its limits but also noting that it is broadly effective across demographic and ideological categories.

[1]Many current formations of empathy also involve cognition to some extent, though affect is often emphasized. See Davis (2006) for a broader discussion.

2 Encouraging Empathy Through Peer Praise

Empathy provides obvious benefits at the individual and group level (Sirin, Valentino and Villalobos, 2021), but as many have noted, it comes at some costs (Howick et al., 2020).[2] That cost may be cognitive—effortful and intentional cognitive processes at the heart of perspective-taking being more resource-intensive than automatic heuristic thinking—or affective or, most likely, bundled (Hodges and Klein, 2001). And while there is widespread consensus that these costs exist, there is still much to learn about how empathy can be difficult and how we can encourage it in the face of those headwinds. While some recent work (such as Cameron et al., 2019) has begun to focus on establishing the "price of empathy," we pick up the thread by more precisely evaluating this aversion towards empathy by individuals, and use that information to gauge the effectiveness of our proposed intervention. Our innovation is to leverage the strong desire for peer praise to encourage greater empathy, as well as highlight the affective mechanism through which praise shifts behavior.

Ways to encourage empathy towards an outgroup or other person abound, but such interventions are often expensive, hard to implement and difficult to scale up. Early studies typically exposed respondents to a story focused on an outgroup member and the treatment was often as simple as instructing subject to (selectively) take the perspective of the person in the story (e.g., Coke, Batson and McDavis, 1978). Other common approaches include empathy-based exercises within intergroup contact scenarios (Tropp and Barlow, 2018 offer a recent review). For example, Broockman and Kalla (2016) and Kalla and Broockman (2020) successfully utilize face-to-face interpersonal conversations that incorporate variations of perspective-taking, a key component to empathy, to reduce exclusionary attitudes towards outgroup members. More recent work has explored moving these interventions online, either through relatively short interactive exercises (Adida, Lo and Platas, 2018) or more involved online role-playing games (Simonovits, Kezdi and Kardos, 2018) or even ones requiring specialized virtual reality hardware (Herrera et al., 2018). A common thread, however, is that these interventions typically require careful training of enumerators, (almost always) additional costs in equipment, time and footwork, and do not tap into natural and preexisting resources surrounding the population of study.

Given the established benefits of empathy, an eye towards encouraging it when it might otherwise be avoided, and the need for a scalable and "light-touch" intervention, we propose harnessing a more naturally-occurring phenomenon understood to have significant impact on individual behaviors:

[2]It is possible that empathy also comes with "fewer benefits" compared to obvious alternative behaviors, though the literature on this strain of reasoning is less developed than the costs literature.

peer praise. Definitions of praise abound but generally agree that the concept centers on "positive evaluations... of another's products, performances or attributes" (Kanouse, Gumpert and Canavan-Gumpert, 1981, 181) and focus on the "evaluation and approval" of the one giving the praise (Kelly and Daniels, 1997).[3] Praise is usually described as being either about behavior or personal qualities, and occurs either ex-ante or ex-post whatever is being encouraged: in our design, all respondents completed a practice round in which they engaged in both empathy and pure description, so that when they were assigned to receive praise as part of the experimental treatment, the praise was for something they had already done and could choose to do more of in the future. In line with a consensus that views behavior and effort-specific praise as more effective than "personal praise" (Mueller and Dweck, 1998), we focus on praise for engaging in empathy randomly assigned to our respondents in advance of their choice to engage in empathy or not (ex-ante in order to cleanly identify the effects of the treatment on behavior). Peer praise is a promising candidate for such an intervention given its documented effects on behavior more generally as well as its association with positive emotions, both of which should help to motivate empathetic behavior. We further explore whether this type of peer admiration can be shifted to an online forum for better scalability.

The promise praise holds as an intervention is based in part on its natural connection to positive emotions: in fact, one of the distinguishing characteristics of empathy is that it operates by "ramping up emotion and the feeling of oneness with others" (Gilin et al., 2013, 4). Peer praise is thus an ideal candidate for encouraging empathy towards others given its role in fostering positive emotions and the link between affect and empathy. An early review sums up the consensus view that the "obvious and immediate outcome" of praise is "simple, positive affect" (Delin and Baumeister, 1994, 224). In fact, the link between praise and positive emotions is taken to be a baseline expectation in much of the literature, its truth self-evident enough that most work focuses on conditions—such as obviously insincere compliments—in which praise *fails* to lead to positive emotions (Morton, Mikolajczak and Luminet, 2020). And while there are strong links between praise and positive emotions, there are also links between positive emotions and increased effort and motivation (Erez and Isen, 2002; Foo, Uy and Baron, 2009), productivity (Oswald, Proto and Sgroi, 2015), attention (Storbeck, Dayboch and Wylie, 2019) and generally improved cognition along multiple dimensions (Subramaniam and Vinogradov, 2013). In fact, recent observational work suggests a link between

[3]Praise is sometimes distinguished from highly similar concepts such as "encouragement" (often associated with tasks with which a person is currently struggling or in which they performed negatively) and simple acknowledgement/feedback, which is inherently neutral and non-judgmental. See Henderlong and Lepper (2002, 775) and Pety, Kelly and Kafafy (1984).

positive mood and pro-social behavior (Aknin, Van de Vondervoort and Hamlin, 2018) that might operate as a feedback look or "virtuous cycle" (Layous et al., 2017).

And while praise itself is connected to positive emotions (which, in turn, might motivate prosocial behavior), a related literature on the positive network effects of peers suggests further how an effective intervention might be designed. Peer effects have been shown to occur across contexts, from uptake of education, future planning and emotional happiness to economic and welfare outcomes and to persist over time (Duflo, Dupas and Kremer, 2011; Duflo and Saez, 2002; Fowler and Christakis, 2008; Bertrand, Luttmer and Mullainathan, 2000; Carrell, Fullerton and West, 2009). That peers can substantially influence one's behavior is unsurprising; a multidisciplinary literature on peer effect processes illustrates this group as increasingly important upon broaching adulthood, among respected peers, and especially for peers with whom one shares values (Brechwald and Prinstein, 2011). Recent work has further emphasized that peer influence is especially relevant to the development of prosocial behaviors (Barry and Wentzel, 2006) for which empathy is often considered a precursor (Balconi and Canavesio, 2013). The peer-oriented motivation of our work aligns well with that of Paluck, Shepherd and Aronow (2016), who also tap into peer networks to encourage anticonflict norms and behavior in a middle school setting (though like many interventions described earlier, requires extensive collection of network information and a large infrastructure for intervening). An important mechanism that may be at play is the desire to maintain favorable evaluation from admired peers, which can in turn support a positive sense of self (Gibbons, Gerrard and Lane, 2003). While our focus on the connection between praise and pro-social behavior is not new, previous work has often centered around child-parent relationships and/or with an emphasis on adolescent populations (Brechwald and Prinstein, 2011).

3 Research Design and Methods

We measure the aversion to empathy, the effects of peer praise for encouraging it, and the extent to which peer praise is mediated by positive emotions, with a series of five online randomized controlled survey experiments on over two thousand adults from August 2020 to January 2021. Overall, attrition was quite low across all studies and uncorrelated with assignment to treatment condition (see discussion in Appendix A and guidance for examining attrition in Lo, Renshon and Nygate-Bassan, 2021). We avoided negative affect as much as possible (by designing our studies without negative peer feedback or eliciting of negative emotions), did not use deception

and established wages via the highest current minimum wage per hour in the U.S. at the time the studies were fielded (see Appendix K for more on ethical considerations).

Our estimating model of choice for the binary task choice outcome is a logistic regression, and for numeric continuous outcomes—such as reservation wage or happiness index value—we estimate ordinary least squares models, both with robust standard errors and clustered at the respondent level in the cases of multiple observations per respondent. Figure 1 provides an overview of our studies. All studies were fielded on Amazon MTURK using Qualtrics.[4] Studies 1 and 2 lay the groundwork for our contribution by establishing a baseline cost to empathy and eliciting naturalistic peer praise from online respondents. Study 3 provides the first evidence that peer praise (collected in Study 2) encourages empathetic behavior. Studies 4 and 5 explore mechanisms for our peer praise intervention, focusing on how praise reduces the barriers to empathy by increasing positive affect (happiness, specifically).

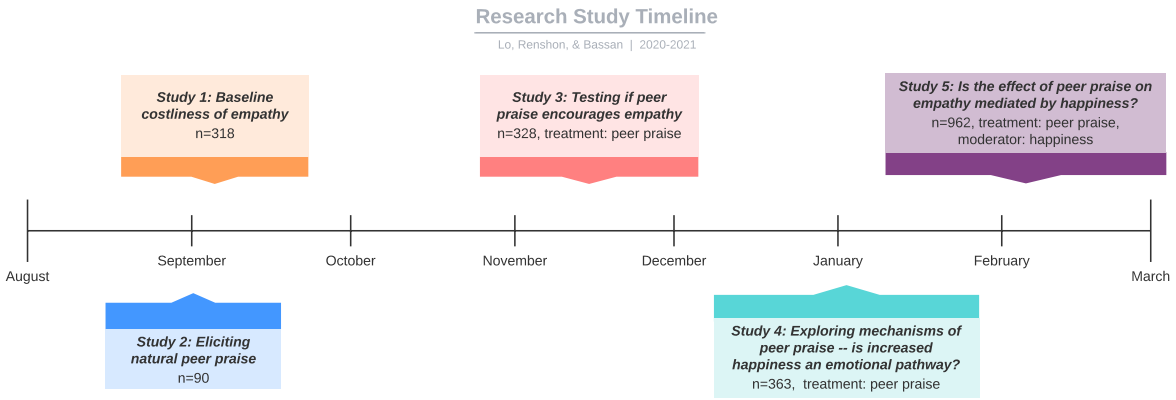


Figure 1: **Research study timeline.** *N* denoted refers to # of respondents, not the number of observations.

Our main experimental task (used in Studies 1 and 3-5) was adapted from Cameron et al. (2019), a design explicitly engineered to measure motivated empathy avoidance with behavior-based revealed preferences. This type of forced-choice scenario mimics many everyday occurrences of empathy regulation, where people might similarly choose to scroll quickly past charity-based ads or opt for walking around non-profit volunteers on the street. In common across these studies, subjects chose between two decks of cards, one marked FEEL and the other marked DESCRIBE. Upon choosing a deck, a picture of a male face appeared, drawn from the Chicago Faces database (Ma, Correll and

[4]All studies described in this paper were approved by UW-Madison IRB as Study # 2020-0843. Participants in any of the studies described in the paper were prevented from re-enrolling in any other empathy-related study run by authors.

Wittenbrink, 2015) and randomized (within-subject, without replacement) along the dimensions of race (Black or White) and valence (angry or fearful). Following a practice round—in which they complete both FEEL and DESCRIBE versions—subjects completed multiple rounds of this choice task, each time writing: (1) a complete sentence describing either the feelings/experiences or descriptive characteristics (2) three words describing feelings/experience or descriptive characteristics and (3) a feeling thermometer towards the individual in the drawn picture.

This main task was also modified and used in two further ways. In Studies 1 and 3-5, subjects (after the main choice task) completed an incentivized wage-elicitation version of the task in which 12 pairs of decks were presented sequentially on one page, each with wages associated with them—DESCRIBE task was pegged at \$1.00 and FEEL deck ranged from \$0.90 to \$2.00. For each pair, subjects chose which wage-task they would prefer; the incentivized aspect of the task manifested in a random draw of one of the pairs of wage-task choices, and respondents were paid the associated wage to conduct the associated task. In Study 1, subjects were randomly assigned to either a REAL COST or HYPOTHETICAL version of the wage elicitation task (while in Studies 3-5, all decisions involved real incentives).[5] Following the incentivized task, subjects answered questions about how they chose between decks, questions about task load (adapted from Hart & Staveland's 1988 NASA task load index) and empathy (adapted from Interpersonal Reactivity Index; Davis, 1983) and finally filled out demographic information.

Our peer praise intervention was designed with two features in mind. First, we sought to intervene as lightly as possible, both to avoid demand effects as well as to satisfy the requirement that our treatment be low-cost and scalable. Second, we designed the intervention to accord with extant theories and empirical guidance that provide scope conditions for *when* praise is an effective motivator. Prime among those conditions are that the praise is perceived as sincere, that it encourages something that is controllable by the recipient (effort, rather than ability or personal attributes, for example; Henderlong and Lepper, 2002) and that it conveys information about norms and/or social comparisons (Webster et al., 2003). In order to satisfy the first requirement, the praise intervention was as "light-touch" as possible, consisting merely of a word cloud of praise

[5]Previous studies such as Cameron et al. (2019) use hypothetical settings to elicit wage preference, but the literature on wage elicitation suggests that often hypothetical scenarios can lead to under or over-stating of true preferences, whereas incentive-compatible designs that credibly tie respondents to real wage payouts do not suffer from such bias (Berry, Fischer and Guiteras, 2019). As such, we chose to measure reservation wage with both types of designs first; while we find suggestive evidence that there is no statistically significant difference in reported wage preferences in REAL or HYPOTHETICAL settings in Study 1, our findings differ from a similar hypothetical scenario posed in Cameron et al. (2019) as the literature might predict, and so, as a conservative approach, we continue in the studies to follow to use the REAL design whenever wage preferences are measured.

and a favorability rating for those that engage in it, displayed for only a few seconds.[6] The second set of requirements was satisfied by fielding a non-experimental survey (Our Study 2 in Figure 1) designed to elicit actual praise and verify that it was perceived as genuine by online respondents.[7] Combining the language elicited from respondents, we created a "peer praise empathy" wordcloud that presents the most commonly used unique words sized by their likelihood of usage, presented in Figure 2a.[8] Moreover, the phrasing of our intervention (in Studies 3-5) emphasized the social norm aspect of the praise ("peers of yours..."). Finally, in all studies in which peer praise for empathy was administered as an intervention, we included an additional placebo treatment arm in which peer praise for *description* was treated as well.[9]

Studies 3-5 all elicited emotional states at some point during the study. Study 3 asked respondents to rate their emotional state following the treatment and the task using a modified version of the Discrete Emotions Questionnaire (Harmon-Jones, Bastian and Harmon-Jones, 2016*b*).[10] Studies 4 and 5 both measured emotional states as mediators, and as a result focused only on "happiness" and "pride" and moved measurement of emotional states such that they were post-treatment but pre-task and DV measurement. In accordance with best practices for measurement (Harmon-Jones, Bastian and Harmon-Jones, 2016*a*), emotional states elicited post-task asked subjects to think about how they felt "during the task" and emotions measured prior to the task asked about their emotions "right now."

4 Results

Study 1 verifies that empathy is comparatively costly (or has fewer "benefits") and provides a baseline against which to evaluate the effectiveness of our peer praise intervention. Preference against empathy is established in three ways. First, the empathy task had a lower likelihood of

[6] "Peers of yours on this platform have said they hold favorable feelings towards people who engage in empathetic behavior, with an average feeling thermometer score of 7.9, on a scale from 0 (least favorable) to 10 (most favorable). That same peer group provided real feedback, which is pictured in the word cloud below."

[7] After eliciting the praise for others in Study 2, respondents rated how genuine it seemed to them and were given the option to go back and edit their praise to make it more sincere. Respondents were asked to rate the praise they gave for how sincere they believed it would be perceived by others receiving the praise on a scale from 0 (not genuine at all) to 100 (very genuine); average ratings for the peer praise for empathy was 71.90 (SD=20.90) and for objectivity it was 72.32 (SD=21.14).

[8] We similarly create a "peer praise for objective behavior," found in Figure 3a. Appendix Figure **??** presents words that are most likely to differentially occur for empathy and objective tasks.

[9] In the praise for description, the instructions were identical to the praise for empathy treatment, with only slight differences in the feeling thermometer score (7.2 instead of 7.9) and a very subtly different word cloud.

[10] Specifically, we removed items relating to "desire" and "relaxation," lowered the number of items per emotion from 4 to 3 to ease burden on respondents and added items clustering around the emotion of "pride," based on work by Webster et al. (2003) and Williams and DeSteno (2008).

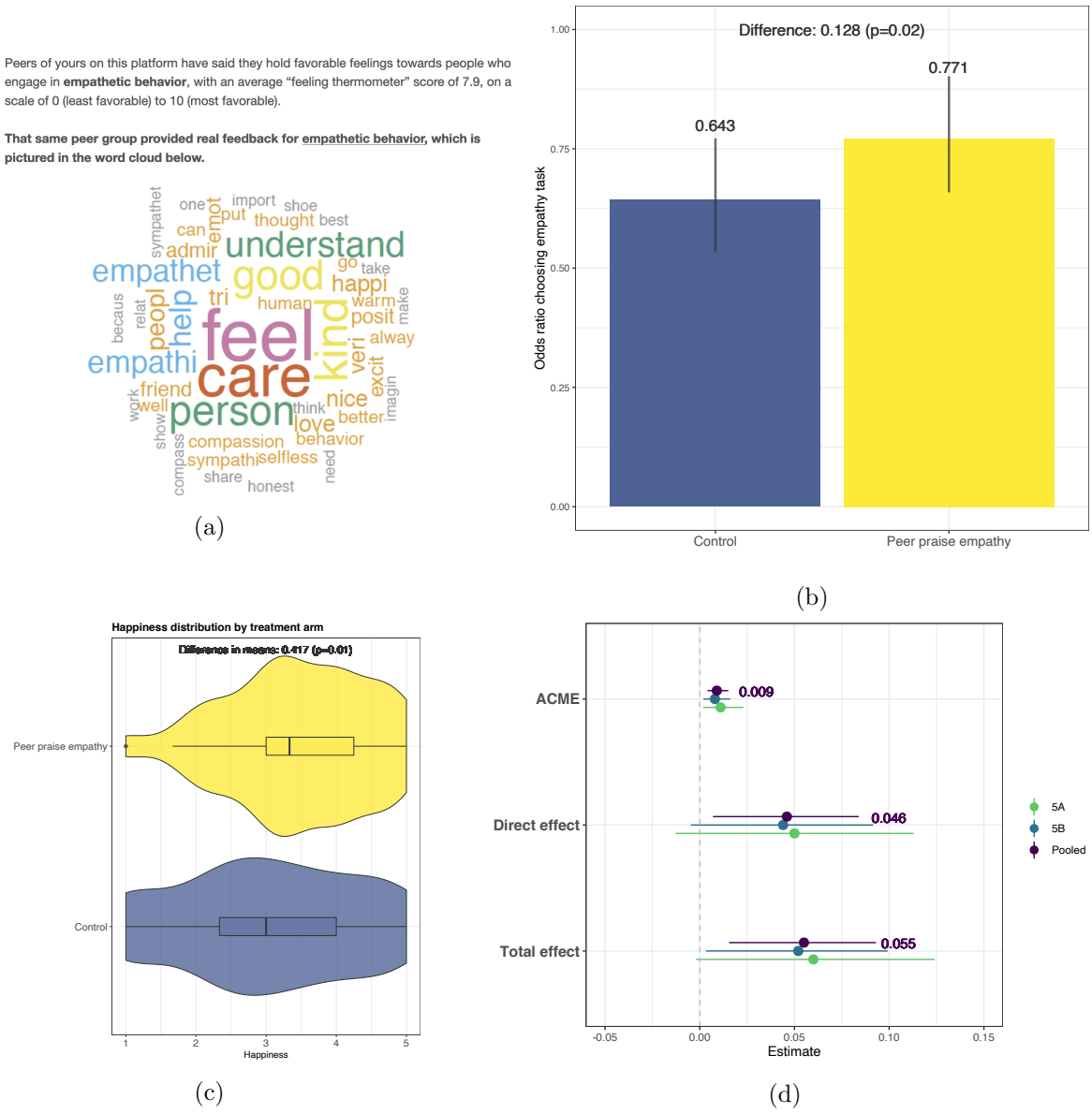


Figure 2: **Peer praise effect on empathy.** (a) presents the main peer praise treatment, formed from eliciting naturalistic praise in Study 2. (b) plots the odds ratios (exponentiated log-odds) of choosing the empathy task for control and peer praise for empathy groups from Study 3. (c) plots distributions and barplots of the happiness index for control and peer praise for empathy groups from Study 4. (d) presents mediation estimates of interest (on log-odds of choice task) from Study 5 (which included to two fielded days of surveys, referred to as 5A and 5B).

being chosen (39.7%) than the descriptive task. Second, the reservation pay for empathy was higher than for the descriptive task: if the description task pay is \$1.00, then the average respondent needed the empathy task to be raised to \$1.098 to shift to the latter ($p < 1e-13$).[11] Finally, our DVs elicited post-treatment verify that subjects perceived empathy as more difficult and more costly: the described the empathy task (on a scale from 1 to 5) as more demanding ($0.234(p = 0.02)$), harder ($0.377(p = 1e-4)$) and felt more insecure/anxious ($0.234(p = 0.03)$) about it and less successful at it ($-0.19(p = 0.04)$) than the objective task and were more likely to report preferring the DESCRIBE task than the FEEL task.[12]

Having established that empathy is costly from both the subjective experience of our subjects and our estimates of the cost of incentivizing it, we turn to the question of how we might reduce those costs and encourage empathetic behavior. Using the elicited praise from Study 2, Study 3 tests whether peer praise is able to overcome the costs of empathy and encourage people to engage in empathetic behavior. Using the same choice task as Study 1, repeated for 15 trials, we find that respondents choose FEEL over DESCRIBE more frequently when exposed to the praise treatment (compared to a control condition of no praise). Specifically, the odds ratio of respondents choosing the FEEL task over the DESCRIBE task for peer-praised respondents was 0.128 ($p = 0.02$) higher than the control group. This translates to 1.20 times the odds of choosing the FEEL task for the control group. In other words, the peer-praised group had a 20% greater likelihood of choosing the empathy task over the objective task compared to the control group. [13] We find convergent evidence from the real wage task, where praise for empathy lowered respondents' reservation value compared to both control (no praise) and the placebo (praise for description), though the differences were not statistically significant.

Studies 1-3 demonstrated that empathy was costly, and piloted a promising light-touch intervention to encourage empathy. We turn now to the question of *how* peer praise encourages empathy. Several candidate mechanisms are possible, none of which are mutually exclusive and which can be grouped into two "families" of explanations. The first family of mechanisms focuses on cost, while the second focuses on norms. The norms explanation for how praise encourages empathy

[11] This is only a fourth of the pay needed to shift respondents found by Cameron et al. (2019) (\$0.39); thus we find that while a substantial ten percent increase in wage is required to shift a respondent towards the empathetic task from the objective task, our incentive-compatible real wage design elicits a one fourth wage difference compared to the hypothetical choice task used by Cameron et al. (2019). The design randomized subjects into a real or hypothetical incentive condition, allowing us to explore differences between real/hypothetical incentives: we find no significant difference between our REAL COST and HYPOTHETICAL COST conditions.

[12] 28.9% preferred DESCRIBE compared to 18.9% preferring FEEL. For details on task load summaries see Appendix B.

[13] See Appendix Study 3 for table with log odds and odds ratio estimates.

is that it may do so by changing respondents' beliefs about what is normatively "good" behavior (behavior valued by others). Evidence from Study 3 suggests that this is not the case: if praising a behavior worked by changing respondents' beliefs about how valued it is by others, our placebo condition ("peer praise for description") should have led to a higher likelihood of choosing objective description relative to our control (no praise) condition. That it did not (the change in odds of choosing the empathy task over the objective task was 0.05 ($p = 0.37$); see Figure 3b), despite adequate power, suggests utility of focusing on the "costs" family of potential mechanisms instead.

With one group of mechanisms tentatively ruled out, we focus our efforts on the cost/benefit mechanisms, beginning with suggestive evidence from Studies 1 and 3 that respondents do in fact see empathy as more costly relative to objective description. Our evidence for this comes from our task difficulty questions administered to respondents after they completed the choice task. Additionally, Study 3 (and 3b) showed that respondents had a higher reservation price for empathy compared to description. However, those results suggest only that there may be a cost to empathy, but not what the cost is or how it operates. Since we have evidence from other work on the relationship between affect and empathy, we focus in Study 4 on the emotional pathway and, specifically, the extent to which praise causes happiness. In Study 4, we show that peer praise increases respondents' reported happiness, as one would expect if peer praise encouraged empathy through an emotional pathway. Figure 2a (c) presents the distribution of the measured happy index for respondents who received peer praise for empathy and respondents in control; peer praise is associated with a 0.417 ($p = 0.01$) bump upwards in a five point happiness scale.[14]

Further corroboration for the argument that peer praise encourages empathy *through an emotional pathway* is provided by Study 5, in which subjects participated in the same choice task as earlier studies—for either 3[15] or 20 trials—combined with measurement of happiness described earlier. We follow Imai, Keele and Yamamoto (2010) and find that the effect of peer praise on choosing an empathetic task is mediated by how happy the receiver feels. [16] The average causal marginal effect (ACME) of respondent happiness is 0.009 for the log-odds of the choice task, or 16.4% of the total effect of the peer praise treatment.

[14] We test and find similar results for a related dimension of positive affect, pride, and present results in Appendix Figure G.23.

[15] We calibrated design for Study 5 based on power calculations designed to reduce trials and increase overall sample size directly from findings in Study 3 which suggested some tapering off of peer praise effects over many trials.

[16] Our measurement approach to the mediation effect of happiness does not include randomization of both the treatment (peer praise) and the mediator (happiness) in a parallel design, but rather only randomization of the treatment and direct measurement of the mediator after treatment. This is after careful consideration of the well-known difficulties of meaningful and valid experimental manipulation of mediators (Imai et al., 2011) (and for which emotions can be particularly tricky). We conduct sensitivity analyses of our mediation approach in the Appendix.

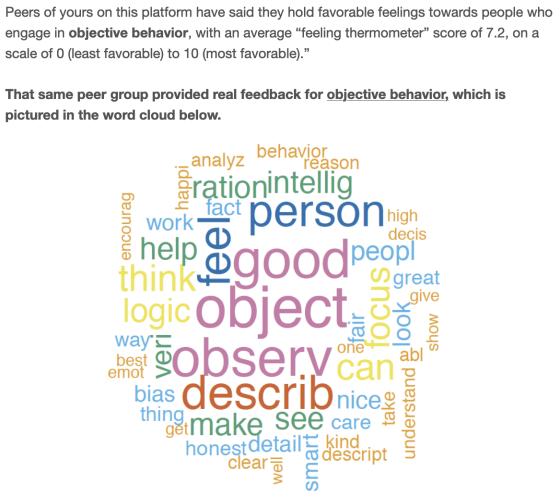
5 Discussion

Though empathy is widely recognized as normatively and instrumentally important, significant gaps remain concerning *why* empathy is difficult and what we can do to encourage it. Most extant work on encouraging empathy involve resource-intensive perspective taking exercises, often requiring trained interlocutors or complicated online simulations. Our innovation was to introduce a low-cost, light-touch intervention based on praise from peers. Across five studies, we were able to first verify and precisely estimate the cost of empathy and then demonstrate the utility of a novel "peer praise" intervention that lowers the barriers to empathetic behavior. We also provided evidence ruling out one family of possible mechanisms (based on norms) and instead show that praise works through an affective pathway by boosting happiness in our treated respondents. In our discussion below, we focus on several scope conditions to the effectiveness of our intervention. Among the limiting factors, we note that peer praise does not work as well for other behaviors as it does for motivating empathy, that it works best for the most attentive and that its effectiveness seems to decline over time in the longer versions of our experiments. We conclude this section by highlighting broad evidence that peer praise does motivate empathy across demographic and ideological categories.

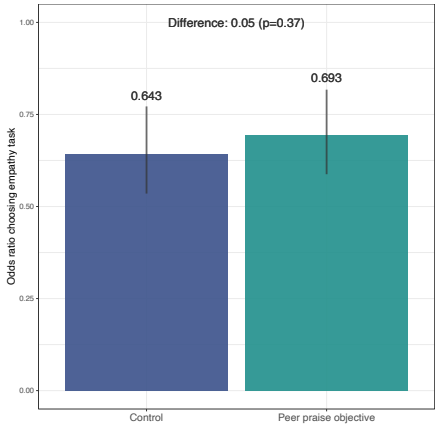
The Limits of Peer Praise

We offer evidence of peer praise working (through happiness) to lower barriers to empathetic behavior; but does peer praise work to move behaviors on whatever is praised? We find that peer praise for objective behavior is not an effective intervention for increasing respondents' willingness to choose the objective task. We do this by eliciting naturalistic praise for objective behavior (see (a) in Fig. 3) and randomizing respondents to receiving the peer praise for objective behavior and finding their likelihood in choosing between tasks. If peer praise works similarly for objective behavior, we should see the likelihood of choosing the empathy task *drop* for treated respondents compared to their control counterparts. In Fig. 3 (b) we see that the odds increase by 0.05 and is not statistically significantly different ($p = 0.37$). This suggests something about the potential limits of a peer praise intervention—it doesn't necessarily shape any and all categories of behavior—as well helping us to pinpoint *why* praise does motivate empathetic behavior.

Above we note that peer praise is not a universal motivator of behavior, but our results also suggest specific boundaries for how it motivates empathy. Two factors seem to shape the efficacy



(a)



(b)

Figure 3: (a) Peer praise for objective behavior. (b) Odds of choosing the empathy task over the objective task under Control and Peer praise for objective behavior groups.

of the intervention: attentiveness and repetition. In Study 5, subjects were asked to participate in either 3 or 20 trials of the choice task.[17] From this, we can see the efficacy of peer praise in the first three trials across both versions of the study, but also clearly see in the longer choice task that the effect of praise declines over trials (Figure I.37 in Appendix I), such that after the first four or five trials the total effect of praise and the average causal marginal effect of praise (through happiness) become indistinguishable from zero. In Figure I.36 (Appendix I), we examine subgroup effects by respondent attentiveness in Study 5, as measured by our two sets of attention checks (a combination of grid and multiple choice questions, as suggested by Berinsky et al. 2019). We find

[17]This was not randomized but represent slightly different versions of the study fielded on different days of the same week).

that peer praise works least well for the small number of our least attentive respondents: the 6% of our sample who "failed" both types of attention checks). The two most plausible (though not mutually exclusive) explanations for this are either that subjects who are least attentive in online survey are also least responsive to peer praise, or that our intervention requires some minimal amount of focus or attention in order to work.

Peer Praise Works Broadly Across Groups in Encouraging Empathy

Finally, our experiments provide an opportunity to wade into a larger debate on individual differences in empathy. It is relatively old-hat to note that individuals differ in their levels of baseline empathy (Davis, 1983) and that there is a distinction to be made between ability—or, empathic accuracy (Sherman et al., 2015) and proclivity to engage in empathy (Zaki, Bolger and Ochsner, 2008). More recent work has suggested that liberals and conservatives might differ in baseline empathy, with one notable study concluding that "liberals wanted to feel more empathy and experienced more empathy than conservatives did" (Waytz et al., 2016, 1450, see also Hasson et al., 2018; Simas, Clifford and Kirkland, 2020).

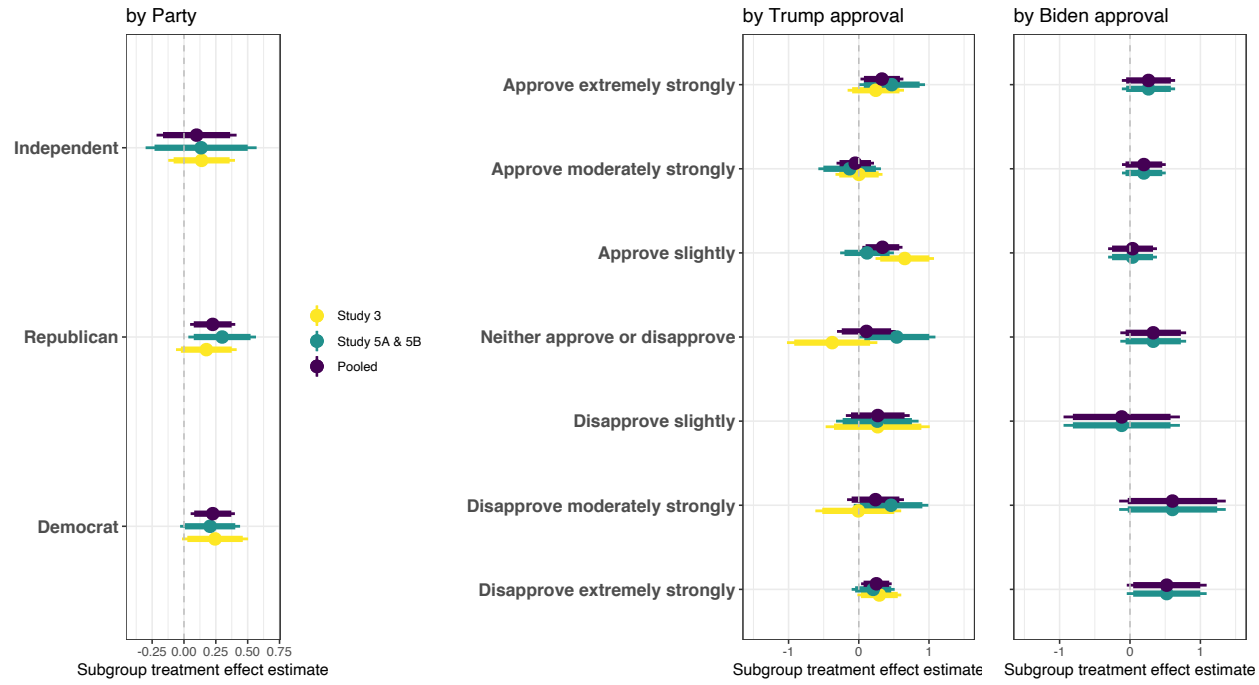


Figure 4: **Subgroup effects by party (left), Trump approval (middle), and Biden approval (right).** At the time of fielding for Study 3, President Trump was in office (and therefore approval was measured as "presidential approval"), but by Study 5, President Biden had taken office and thus we separately and explicitly measured "Trump approval" as well as "Biden approval" ("presidential approval [for Biden]").

The raft of similar findings (Hasson et al., 2018; Simas, Clifford and Kirkland, 2020) suggest some consensus on this point, though we note that these studies are by and large premised on measurement of *baseline* empathy that is self-reported by respondents, not empathetic behavior. Given that empathic accuracy and proclivity seem to be largely orthogonal, it is worth considering if the gulf in empathy between liberals and conservatives is as wide as it seems. In fact, analyses in Figure 4 (and detailed in Appendix I) shows that peer praise works to encourage empathetic behavior broadly across ideological boundaries, whether measured as Party ID, or support for President Trump or Biden. Further analyses show that praise is also effective in motivating empathy across education, sex and racial identity categories.

We also find that pre-treatment differences in baseline empathy—our respondents' "taste for empathy"—do *not* predict susceptibility to our praise treatment (see Figure I.35, Appendix I). In other words, our intervention does not seem to be simply working by motivating people already inclined to engage in empathy. Finally, respondents "peer-praised into empathy" show no evidence of shortcutting or using less effort compared to those who chose empathy under the control condition (Table F.9 in Appendix F). We take the sum of these results to show both the overall effectiveness of the proposed peer praise intervention, but also evidence suggesting that we may have been too quick to categorize ideological groups as more or less empathetic.

While we establish a general effect of peer praise in this work, we leave for our follow-up paper the important question of whether the identity of the praiser (e.g. a co-gender or co-partisan) might differentially affect the recipient's willingness to engage in empathetic behavior. In addition, we have also set aside explorations of the, likely meaningful, impact of the *target* of empathy for future work; we do not experimentally manipulate these targets prior to our respondents' choosing whether to engage in the objective or empathetic task in lieu of focusing here on the first order question of whether peer praise for empathy can, in general, motivate empathetic behavior.

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