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FlashReport

Feeling socially connected increases utilitarian choices in moral dilemmas

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HIGHLIGHTS

- Feeling socially connected increased utilitarian choices in high-conflict moral dilemmas.
- Social motivations impact moral judgment.

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ABSTRACT

The current research explores the relationship between feeling socially connected and decision-making in high-conflict moral dilemmas. High-conflict moral dilemmas pit utilitarian outcomes, where one person is directly harmed to save five others, against people's social intuitions and values, e.g. "Do not harm others." Drawing on sociality motivation research, we predict that feeling socially connected increases utilitarian choices in high-conflict moral dilemmas. We support this prediction in three studies. Our studies manipulated social connection, independent of the dilemma context, using live social interactions (Studies 1–2) and a recall task (Study 3). Across studies, those induced to feel social connection made more utilitarian choices in a high-conflict moral dilemma.

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Introduction

"It is often affirmed that utilitarianism renders men cold and unsympathizing; that it chills their moral feelings towards individuals."
[Mill, 1879]

Utilitarian choices promote the greatest good for the greatest number of people (Bentham, 1789/1948; Mill, 1879). In moral dilemmas that sacrifice one to save five, utilitarian outcomes clash with moral values, such as proscriptions against harming others (Baron & Spranca, 1997; Kant, 1785). High-conflict moral dilemmas are a particular type of dilemma in which the utilitarian outcome requires the decision-maker to directly harm another person (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001). For example, the utilitarian choice in the footbridge dilemma requires physically pushing someone to their

death to stop a runaway trolley from killing five others farther down the track. High-conflict dilemmas elicit aversive moral emotions and typically up to 90% of respondents forego the utilitarian choice (Cushman, Young, & Hauser, 2006).

As John Stuart Mill lamented, people who endorse utilitarianism are perceived as socially disconnected and having minimal moral concern. Although this may resonate with specific populations, e.g. psychopaths (Bartels & Pizarro, 2011; Koenigs, Kruepke, Zeier, & Newman, 2012), recent empirical evidence suggests that social connections may actually encourage utilitarian choices in moral dilemmas.

For instance, Kurzban, DeScioli, and Fein (2012) looked at people's willingness to endorse the utilitarian choice of sacrificing a brother, a friend, or a stranger, to save five people of the same type in the footbridge dilemma, e.g. sacrifice a brother to save five brothers. They found that participants made more utilitarian choices when the dilemma involved brothers (47%) or friends (41%) compared to when it involved strangers (28%). Another study found that participants were the most willing to make utilitarian tradeoffs when their choices involved saving in-group members (Cikara, Farnsworth, Harris, & Fiske, 2010). These studies suggest a positive relationship between social connection and utilitarian

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choice. However, these studies manipulated participants' social relationships with those in the moral dilemmas (e.g. kin versus non-kin, in-group versus out-group members). This makes it difficult to distinguish the influence of feeling socially connected from other relational elements (e.g. social stereotypes) and obligations. In the current research we manipulate social connection outside of the dilemma context and predict that feeling socially connected increases utilitarian choices in high-conflict moral dilemmas.

Aversion to harm and moral judgment

The prospect of directly harming another person is psychologically aversive and elicits strong moral affect (Cushman, Gray, Gaffey, & Mendes, 2012; Haidt, 2001; Turiel, 1983). Milgram (1974) found that people were less willing to deliver a painful electric shock when doing so required physically touching the victim's hand compared to delivering the shock from a distance. Likewise, utilitarian choices that require directly inflicting harm (e.g. physically pushing a man to his death in the footbridge dilemma) receive far less endorsement than dilemmas that deliver harm indirectly (e.g. killing a man from a distance by flipping a switch in the switch dilemma). The dual-process theory of moral judgment (Greene, Nyström, Engell, Darley, & Cohen, 2004) suggests that the direct harm in high-conflict dilemmas activates social and moral affect that competes with utilitarian reasoning to impact judgment. In support of this theory, factors that bolster the processing of moral affect reduce utilitarianism and factors that mitigate its impact increase utilitarianism, e.g. visual imagery and incidental positive affect, respectively (Amit & Greene, 2012; Valdesolo & DeSteno, 2006). To explore the question of how feeling socially connected might influence people's willingness to harm one to save five, we consider work on social motivation and social neuroscience.

Humans fundamentally desire social connection (Baumeister & Leary, 1995). Having positive social connections brings cognitive, emotional, and health benefits (Cacioppo, Hawkey, & Berntson, 2003; Heinrich & Gullone, 2006; House, Landis, & Umberson, 1988). Relevant to the current investigation, research finds that feeling socially connected promotes the regulation of aversive affect (Beckes & Coan, 2011). In one study, women who held the hand of a spouse, compared to the hand of a stranger or no hand-holding, reported less unpleasantness and showed less neural threat response to expectations of receiving a painful electric shock (Coan, Schaefer, & Davidson, 2006). In another study clinically anxious youths were exposed to threat-related words and those who completed the task in the presence of their caregiver displayed less emotional reactivity than those who completed the task without their caregiver present (Conner et al., 2012). These studies suggest that, in moral dilemmas, feeling socially connected may reduce the moral affect that typically inhibits willingness to harm one person to save five and increase utilitarian choice. Consistent with this logic, one study found that the presence of a close compared to a distant other increased people's willingness to endorse using harmful interrogation tactics on a detained terrorist (Waytz & Epley, 2012).

We conducted three studies to test whether feeling socially connected increases utilitarian choice in high-conflict moral dilemmas. In each study we manipulated social connection and observed its effects on utilitarian choice a high-conflict moral dilemma. Importantly, we manipulated social connection outside of the moral dilemma context. In doing so we strip away other elements of social relationships (e.g. kin versus non-kin categorizations) and test whether the psychological experience of social connection significantly impacts moral judgment.

Study 1

In Study 1 we manipulated whether participants engaged in a social interaction or solitary activity. We predicted that those who engaged in social interaction would feel more socially connected and make more utilitarian choices. Our primary dependent measure was the footbridge

dilemma. For comparison, we also included the switch dilemma, a logically equivalent low-conflict variation of the footbridge dilemma in which the utilitarian choice involves indirectly killing a man by flipping a switch (Thomson, 1986). The switch dilemma tends to evoke less moral affect and, consequently, results in more utilitarian choices (Cushman et al., 2006). Because moral emotions are a more central determinant of choice in the footbridge, compared to the switch dilemma, we expected social connection to increase utilitarian choices in the footbridge to a greater extent than in the switch dilemma.

Participants/procedure

Ninety-four White undergraduates ($M_{\text{age}} = 20.27$, $SD_{\text{age}} = 1.39$; 62% women) came to the laboratory in groups of 4–10 and were compensated \$15 each. Data from three participants who guessed the hypothesis were excluded from analysis, leaving a final sample of 91.

Stage 1 of the experiment asked participants to complete filler tasks in a breakout room for 15–20 min either by themselves (*no-interaction* condition) or with a randomly assigned partner (*interaction* condition). To promote positive interactions in the interaction condition, partners were matched on race (i.e. Caucasian) and gender. Additionally, the first task was an "ice-breaker" in which partners discussed their personal interests; *no-interaction* condition participants wrote about their personal interests by themselves.

For Stage 2, participants were separated and privately responded to the switch and the footbridge trolley dilemmas, in that order. They made binary choices, *Yes* (pull the switch or push the man) or *No* (do not pull the switch or do not push the man). To measure social connection, participants indicated how much they felt socially connected, accepted, and lonely (5-point scales; 1 = not at all, 5 = very much so; $\alpha = .69$). Given previous research linking positive affect and utilitarianism (Valdesolo & DeSteno, 2006), participants also completed the PANAS to allow us to test for possible effects of positive ($\alpha = .86$) and negative ($\alpha = .83$) affect.

Results/discussion

Social connection manipulation check

Those in the interaction condition ($M = 3.92$, $SD = .59$) reported feeling more socially connected than those in the *no-interaction* condition ($M = 3.43$, $SD = .91$), $t(89) = 3.01$, $p = .003$, $d = .63$.

Utilitarian choice

Chi square analyses revealed a significant effect of condition in the footbridge dilemma but not in the switch. In the footbridge dilemma, the odds of endorsing the utilitarian choice in the interaction condition (14/45; 31%) was 3.01 times greater than in the *no-interaction* condition (6/46; 13%), $X^2 = 4.33$, $p = .037$. In the switch dilemma, the odds of endorsing the utilitarian choice in the interaction condition (41/45; 91%) was 2.16 times greater than in the *no-interaction* condition (38/46; 83%), $X^2 = 1.44$, $p = .231$.¹

Mediation analysis

Next we tested whether feelings of social connection mediated the relationship between interaction condition and utilitarian choice. In this case, because the operationalization of the independent variable diverges sufficiently from the underlying construct (social connection is operationalized as social interaction), mediation can be a valuable way to demonstrate that the main effect occurred through the intended process.²

¹ Including the 3 excluded participants, $X^2 = 3.01$, $p = .08$ in the footbridge and $X^2 = 1.53$, $p = .22$ in the switch.

² We tested the mediating effect of social connection in Studies 1–2 because they manipulated social connection indirectly through interactions. Because Study 3 directly manipulates social connection, we do not test for mediation by the social connection manipulation check.

Feelings of social connection significantly mediated the relationship between interaction condition and utilitarian choice (Fig. 1). Self-reported social connection significantly predicted utilitarian choice, $X^2 = 4.29, p = .038$, and weakened the main effect of interaction condition on utilitarian choice, $X^2 = 2.11, p = .15$. The bootstrapped 95% confidence interval with 5000 resamples did not contain zero, indicating a significant indirect effect, $CI[.10, 1.28]$.

Positive and negative affect

Neither positive nor negative affect was a significant mediator, $CI_{\text{positive affect}}[-.27, .65]$ and $CI_{\text{negative affect}}[-.42, .25]$. Study 2 also revealed non-significant mediations, $CI_{\text{positive affect}}[-.16, .37]$ and $CI_{\text{negative affect}}[-.09, .44]$. Additionally, controlling for affect, the main effect of social connection in the footbridge dilemma remained significant in Studies 1 and 3 (p values $< .05$) and became marginal in Study 2 ($p = .082$). These analyses suggest that the impact of social connection is largely independent of positive or negative affect.

In Study 1 socially interacting with a partner, versus working on the same tasks alone, increased utilitarian choice in the footbridge dilemma. Additionally, self-reported social connection mediated this effect. As expected, the effect was attenuated in the switch dilemma.

Study 2

Study 2 replicated Study 1 using a different social connection manipulation, i.e., dyad racial composition. In the *same-race* condition, two White participants were paired together and in the *mixed-race* condition, a White and a Black participant were paired. We expected participants in same-race dyads to experience stronger social connection (Trawalter, Richeson, & Shelton, 2009) and, consequently, make more utilitarian choices.

Participants/Procedure

Seventy-six undergraduates ($M_{\text{age}} = 19.97, SD_{\text{age}} = 1.32$; 52% women) came to the lab in same-gender groups of 8–12 and were compensated \$15 each. Responses from one participant were lost due to a computer malfunction, leaving 75 for analysis. No participants guessed the study hypothesis.

The only structural difference from the procedure of Study 1 was to replace the no-interaction condition with mixed-race dyads (1 White, 1 Black). After responding to the switch and footbridge dilemmas, participants reported their feelings of social connectedness by rating their partner's likeability, familiarity, their interest in working with their partner in the future, and how much they thought their partner was interested in getting to know them (7-point scales; 1 = not at all, 7 = extremely; $\alpha = .82$).

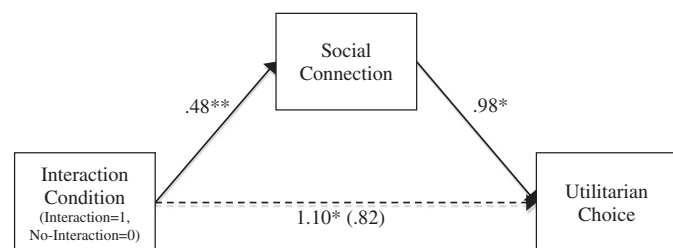


Fig. 1. Feelings of social connection mediate the relationship between interaction condition and utilitarian choice, Study 1; * $p < .05$, ** $p < .01$.

Results/Discussion

Social connection manipulation check

Those in the same-race condition ($M = 5.48, SD = 1.00$) felt significantly more socially connected than those in the mixed-race condition ($M = 4.88, SD = 1.13$), $t(73) = 2.37, p = .021, d = .55$.

Utilitarian choice

In the footbridge dilemma, the odds of endorsing the utilitarian choice in the same-race condition (15/31; 48%) was 2.50 times greater than in the mixed-race condition (6/22 White, 6/22 Black; 27% each), $X^2 = 3.52, p = .06$. In the switch dilemma, the odds of endorsing the utilitarian choice in the same-race condition (27/31; 87%) was 1.04 times less than in the mixed-race condition (20/22 White, 20/22 Black; 91% each), $X^2 = .28, p = .60$.

Mediation analysis

Self-reported social connection did not have a significant indirect effect on utilitarian choice, $X^2 = .02, p = .887$. The 95% confidence interval contained zero, indicating a non-significant indirect effect, $CI[-.29, .39]$.

Consistent with Study 1, social interactions that fostered relatively more social connection increased utilitarian choice. Further, the effect did not depend on the choices of Black versus White participants. In this study, self-reported social connection did not statistically mediate responses to the footbridge. In Study 3 we address this by directly manipulating the psychological experience of social connection.

Study 3

Studies 1–2 manipulated social connection indirectly via real social interactions with high ecological validity. In Study 3 we manipulated social connection with a writing task to more directly alter the psychological experience of social connection.

Participants/Procedure

One-hundred seventy-two respondents ($M_{\text{age}} = 35.56, SD_{\text{age}} = 13.57$; 47% women) from Amazon's Mechanical Turk participated in exchange for a small sum of money.

First, participants completed a writing task, titled "Thinking About Other People", that manipulated social connection. Instructions were adapted from Waytz and Epley (2012). Those in the *close-other* condition read:

Think about someone with whom you currently feel like you have a close relationship. Take a moment to think about how being with this person makes you feel. Please write about a time that made you feel especially close to this person. What happened? How did you feel?"

Those in the *distant-other* condition read:

We would like you to think about someone you have seen before or been in brief contact with, but who you are not acquainted with, i.e. you do not know this person well. A few examples of such a person might be the person who works at the coffee shop that you buy coffee from, but have never had a full conversation with. Or a person whom you see in class or around your office but have never spoken to. Even though you do not know much about this person, please write about him or her. What do you think this person's personality is like? What do you think it might be like to hang out with this person?"

Participants then responded to the switch and footbridge dilemmas. As a manipulation check, participants indicated the closeness of their relationship with the person they wrote about in the recall task (5-point scale; 1 = we have a very distant relationship, 5 = we have a very close relationship). We expected those who thought about a

close other to make more utilitarian choices than those who thought about a distant other.

Results/Discussion

Manipulation check

Those in the close-other condition ($M = 4.67$, $SD = .71$) reported a significantly closer relationship with the person they wrote about than those in the distant-other condition ($M = 1.69$, $SD = .88$), $t(170) = 24.58$, $p < .001$, $d = 3.75$.

Utilitarian choice

In the footbridge dilemma, the odds of endorsing the utilitarian choice in the close-other condition (39/88; 44%) was 2.72 times greater than in the distant-other condition (19/84; 23%), $X^2 = 9.05$, $p = .003$. In the switch dilemma, the odds of endorsing the utilitarian choice in the close other condition (68/88; 77%) was 1.10 times greater than in the distant other condition (59/84; 70%), $X^2 = 1.10$, $p = .294$.

General discussion

Three studies manipulated social connection using either live social interactions (Studies 1–2) or a recall task (Study 3) and found consistent evidence that feeling socially connected increased utilitarian choices in the footbridge dilemma. Consistent with predictions, this effect was attenuated in the switch dilemma, where moral affect plays less of a role in people's responses.

These findings demonstrate that social connection can influence decision-making in high-conflict moral dilemmas. More broadly they suggest the relevance of social-motivational factors in moral decision-making and point to the importance of integrating these factors into dominant frameworks, which primarily consider cognition and emotion (Greene et al., 2004). Our results resonate with social relational models of moral judgment in which moral decisions are contingent on the social motivations and relational frames of those involved (Rai & Fiske, 2011). Consideration of social-motivational factors is critical for understanding real world moral decisions that are often embedded in complex social and cultural contexts and that often involve tradeoffs between competing social motivations. For example, whistleblowers trade off fairness and loyalty, and violent extremists trade off harm to some and the good of their group (Ginges & Atran, 2011; Waytz, Dungan, & Young, 2013). A better understanding of how social motivations impact moral decisions will provide further insight into these important choices.

References

- Amit, E., & Greene, J.D. (2012). You see, the ends don't justify the means: Visual imagery and moral judgment. *Psychological Science*, 23, 861–868.
- Baron, J., & Spranca, M. (1997). Protected values. *Organizational Behavior and Human Decision Processes*, 70, 1–16.
- Bartels, D.M., & Pizarro, D. A. (2011). The mismeasure of morals: Antisocial personality traits predict utilitarian responses to moral dilemmas. *Cognition*, 121, 154–161.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497–529.
- Beckes, L., & Coan, J. A. (2011). *Social baseline theory: The role of social proximity in emotion and economy of action.* : Social and Personality Psychology Compass.
- Bentham, J. (1789/1948). *An introduction to the principles of morals and legislation*. New York: Hafner.
- Cacioppo, J. T., Hawkey, L. C., & Berntson, G. G. (2003). The anatomy of loneliness. *Current Directions in Psychological Science*, 12, 71–74.
- Cikara, M., Farnsworth, R. A., Harris, L. T., & Fiske, S. T. (2010). On the wrong side of the trolley track: Neural correlates of relative social valuation. *Social Cognitive and Affective Neuroscience*, 5, 404–413.
- Coan, J. A., Schaefer, H. S., & Davidson, R. J. (2006). Lending a hand: Social regulation of the neural response to threat. *Psychological Science*, 17, 1032–1039.
- Conner, O. L., Siegle, G. J., McFarland, A.M., Silk, J. S., Ladouceur, C. D., Dahl, R. E., et al. (2012). Mom-it helps when you're right here! Attenuation of neural stress markers in anxious youths whose caregivers are present during fMRI. *Plos One*, 7.
- Cushman, F., Gray, K., Gaffey, A., & Mendes, W. B. (2012). Simulating murder: The aversion to harmful action. *Emotion*, 12, 2–7.
- Cushman, F., Young, L., & Hauser, M. (2006). The role of conscious reasoning and intuition in moral judgment: Testing three principles of harm. *Psychological Science*, 17, 1082–1089.
- Ginges, J., & Atran, S. (2011). War as a moral imperative (not just practical politics by other means). *Proceedings of the Royal Society B-Biological Sciences*, 278, 2930–2938.
- Greene, J.D., Nystrom, L. E., Engell, A.D., Darley, J. M., & Cohen, J.D. (2004). The neural bases of cognitive conflict and control in moral judgment. *Neuron*, 44, 389–400.
- Greene, J.D., Sommerville, R. B., Nystrom, L. E., Darley, J. M., & Cohen, J.D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science*, 293, 2105–2108.
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, 108, 814–834.
- Heinrich, L. A., & Gullone, E. (2006). The clinical significance of loneliness: A literature review. *Clinical Psychology Review*, 26, 695–718.
- House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science*, 241, 540–545.
- Kant, I. (1785). *Foundations of the metaphysics of morals*. New York: Macmillan.
- Koenigs, M., Kruepke, M., Zeier, J., & Newman, J. P. (2012). Utilitarian moral judgment in psychopathy. *Social Cognitive and Affective Neuroscience*, 7, 708–714.
- Kurzban, R., DeScioli, P., & Fein, D. (2012). Hamilton vs. Kant: Pitting adaptations for altruism against adaptations for moral judgment. *Evolution and Human Behavior*, 33, 323–333.
- Milgram, S. (1974). *Obedience to authority: An experimental view*. New York: Harper & Row.
- Mill, J. S. (1879). *Utilitarianism*. London: Longman, Green, and Co.
- Rai, T. S., & Fiske, A. P. (2011). Moral psychology is relationship regulation: Moral motives for unity, hierarchy, equality, and proportionality. *Psychological Review*, 118, 57–75.
- Thomson, J. J. (1986). *Rights, restitution, and risk: Essays in moral theory*. Cambridge, MA: Harvard University Press.
- Trawalter, S., Richeson, J. A., & Shelton, J. N. (2009). Predicting behavior during interracial interactions: A stress and coping approach. *Personality and Social Psychology Review*, 13, 243–268.
- Turiel, E. (1983). *The development of social knowledge: Morality and convention*. New York: Cambridge University Press.
- Valdesolo, P., & DeSteno, D. (2006). Manipulations of emotional context shape moral judgment. *Psychological Science*, 17, 476–477.
- Waytz, A., Dungan, J., & Young, L. (2013). The whistleblower's dilemma and the fairness-loyalty tradeoff. *Journal of Experimental Social Psychology*, 49, 1027–1033.
- Waytz, A., & Epley, N. (2012). Social connection enables dehumanization. *Journal of Experimental Social Psychology*, 48, 70–76.