Nudging: The unexpected impact on observers’ inference of donors’ prosocial behavior

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We proposed that although nudging may encourage participation, being nudged may undermine the intrinsic motivation of a donor’s prosocial behavior in the eyes of an observer. In 3 studies spanning various contexts of prosocial nudging (Ns = 198, 141, and 267 university students, respectively), we demonstrated that observers perceived a donor who was (vs. was not) nudged as less intrinsically motivated to help others. The findings suggested that the perceived motive of a donor’s prosocial behavior is inferred by observers not only from the behavior itself but also from whether or not the behavior is a product of nudging. By investigating the consequences of nudging from the observer’s perspective, we have provided a new lens for understanding the role of nudging in the prosocial domain.

Keywords
prosocial behavior; social perception; nudge; nudging; intrinsic motivation; donation behavior; observer inference

Literature Review

Prosocial Nudging

Charitable organizations often utilize various prosocial nudge tactics to motivate people to contribute. For example, Johnson and Goldstein (2003; 2004) showed that the default setting can have dramatic effects on an individual’s organ donation decision. This is because default options imply a recommended action or act as reference points, and loss aversion leads people to adhere to defaults (e.g., "I agree to donate"); Dinner, Johnson, Goldstein, & Liu, 2011). Social norms are another powerful nudge tactic that can be used to increase prosocial behavior (e.g., Goldstein, Cialdini, & Griskevicius, 2008; Shearman & Yoo, 2007). Appeals by hotels that employ social norms (e.g., cards saying “The majority of guests in this room reuse their towels”) have proven to be superior to traditional appeals focused solely on environmental protection (Goldstein et al., 2008). In a similar vein, Karlan and McConnell (2014) found that listing donors’ names in a public newsletter (i.e., offering public recognition; see also Andreoni & Petrie, 2004; Bénabou & Tirole, 2006) increases donations because people derive additional utility from donations that enhance their reputation or self-image.

Although numerous researchers have documented that these prosocial nudges may effectively promote people’s prosocial behavior, what remains relatively unclear is how observers infer donors’ motives for these prosocial behaviors. Nudging not only induces behavioral changes but also observers’ perceptual changes toward the donor. Thus, this issue is particularly important for understanding the consequences of nudging in a broad sense.
Prior researchers have shown that nudges can sometimes backfire, leading people to react against what they perceive as illicit attempts to shape their behavior (Arad & Rubinstein, 2018; Damgaard & Gravert, 2017; Jachimowicz, Duncan, Weber, & Johnson, 2019) and undermine their autonomy (Shaw, 2017). In our research we examined another potential defect of nudging in the prosocial domain: whether being nudged undermines donors’ intrinsic motivation for their prosocial behavior in observers’ eyes. Nudges can be distinguished as either proself (i.e., focusing on private welfare) or prosocial (i.e., focusing on social welfare; Hagman, Andersson, Västfjäll, & Tinghög, 2015); we focused on investigating the unexpected impact of prosocial nudging on observers’ inferences of donors’ prosocial behavior.

Motive Inference for Prosocial Nudging

Per attribution theory, which explains how individuals understand the cause of behaviors and events (Weiner, 1985; see also Heider, 1958; Jones & Davis, 1965), people make causal attributions from two perspectives: disposition (internal attribution) and situation (external attribution). When a prosocial nudge (e.g., default) induces a person to behave prosocially, it signals that the prosocial behavior is the product of nudging but not the result of the person’s autonomic inclination. That is, observers tend to believe that the situational context nudges the person to take prosocial action, rather than the person’s genuine desire. For example, if a person agrees to make a donation after seeing a soliciting letter from a charity in which the contribute option (vs. the do not contribute option) is set as the default (i.e., nudge with option to opt out), their prosocial behavior may be viewed as a mere acceptance of default nudging. Therefore, observers may attribute this person’s prosocial actions to external nudging rather than to an intrinsic motivation to help. Similarly, when a donor’s prosocial behavior occurs under the condition that a charity uses social norms to encourage participation (e.g., “More than 70% of participants contributed”; termed nudging via conformity), observers may interpret this as indicating that the motive behind the donor’s prosocial behavior is seeking conformity rather than pure altruism. As a result, we anticipated that the use of nudges to induce prosocial behavior would cause observers to infer lower intrinsic motivation among donors. This is also consistent with the literature on motivational crowding, in which it has been reported that external rewards may crowd out people’s intrinsic motivation (Deci & Ryan, 1980; Frey & Jegen, 2001). For example, paying for blood undermines social values and reduces people’s willingness to donate blood (Titmuss, 1970).

In summary, we proposed that, compared with spontaneous prosocial behavior, when a person’s prosocial behavior is a product of nudging (e.g., nudging by the default option, conformity messages, and/or offering public recognition), observers will perceive that the prosocial action is less autonomous. Consequently, observers will perceive this person as having low intrinsic motivation to help others even when the prosocial behavior itself is beneficial. In other words, we anticipated that being nudged would undermine perceived donors’ intrinsic motivation for prosocial behavior in observers’ eyes. We conducted three experiments to test this hypothesis by utilizing three typical nudges in the prosocial domain: default setting, offering public recognition, and employing social norms.

Study 1

In Study 1 we examined whether observers are more likely to attribute a donor’s good deed to ulterior motives when the donor has the opportunity to receive public recognition. Participants playing the role of observers were randomly assigned to the nudging-with-public-recognition condition or the control condition. We predicted that observers would be more likely to perceive the donor as extrinsically motivated in the public-recognition condition than in the control condition.

Method

Participants. Participants were 199 students from various disciplines at Fudan University (141 women, 58 men; $M_{age}$ = 18.70 years, $SD$ = 0.83). One person did not complete the study, leaving 198 valid responses. Participants were recruited to respond to a 20-minute online survey on daily consumption habits in return...
for 20 RMB (US$3) compensation. Upon completion of the survey, we introduced to the participants a campaign held by the Student Union of the university.

**Procedure.** We adopted a two-group (nudging with public recognition vs. control) between-subjects study design. The participants were told that the Student Union was launching a campaign aimed at reducing desertification in Western China and that the organizers needed students’ feedback on this campaign. We then briefly introduced this campaign and the recent desertification situation. Next, we showed the participants a solicitation appeal in which we manipulated the opportunity for public recognition by presenting them with different promises. In the nudging-with-public-recognition condition, participants learned that every donor's name as well as the funding collection progress would be listed on the Student Union’s official website. In the control condition, we told participants that the funding collection progress would be updated on the website but no information on individual donors would be disclosed. After the participants responded to the items, we debriefed them and explained that the intention of the study was to investigate people’s perceptions of different types of donors, so we would not collect money from them. The participants then received their monetary compensation and were thanked.

**Measures.** Given our special interest in how observers perceive donors’ motives, we told all participants, “According to the most up-to-date statistics, the last person who viewed the appeal chose to donate to this campaign a minute ago.” Then, we used two statements to measure participants’ perception of the most recent donor’s motive with regard to helping: “This person donated to the campaign to improve his/her personal image” and “This person donated to the campaign because he/she wanted others to like him/her more” (1 = strongly disagree, 7 = strongly agree). We averaged the two items to create an index of the observer’s inference of donors’ extrinsic motivation (Cronbach’s α = .80).

**Results and Discussion**

Results of an independent samples *t* test show that in the case of nudging prosocial behavior with public recognition, observers were more likely to believe that donors behaved because of extrinsic, rather than intrinsic, motivation ($M_{public\,recognition} = 3.78, SD = 1.40$ vs. $M_{control} = 3.37, SD = 1.44$), $t(196) = 2.00, p = .047, d = 0.29$. There was no significant gender difference in observers’ perception of donors’ motives: $M_{men} = 3.34, SD = 1.40$; $M_{women} = 3.68, SD = 1.43$, $t(196) = -1.52, p = .13$. Our findings suggest that observers had a stronger perception of the extrinsic motivation of donors when they knew that the donor might have the opportunity to obtain public recognition and social image benefits from the helping behavior. In other words, although offering the opportunity for public recognition has been considered an effective way to nudge people’s donations, this nudge led the observers in this study to infer that the donor was motivated by the benefits of gaining public recognition rather than a genuine desire to help.

**Study 2**

In Study 2 we examined how using nudging as the default setting influences observers’ perception of the donor’s intrinsic motivation. We predicted that observers would tend to perceive the donor as less intrinsically motivated when the donation was nudged by the “I want to donate” default option setting (vs. no default option).

**Method**

**Participants.** We recruited 142 students from various disciplines at Fudan University (88 women, 54 men; $M_{age} = 19.16$ years, $SD = 1.37$) to participate in an online survey unrelated to our main study, in exchange for 20 RMB (US$3) compensation. One participant was removed for not responding to one item, resulting in a final sample size of 141. Upon completion of the online survey, we invited all participants to join a charity campaign.
Procedure and measures. We used a two-group (nudging with opt-out default vs. control) between-subjects study design. The cover story told to participants was that the campaign was organized by the United Nations International Children’s Emergency Fund (UNICEF) and aimed to help children living in poverty in China. Then, we briefly introduced the campaign and presented two options at the bottom of the webpage: “I want to donate,” and “I don’t want to donate.” For participants in the nudging with opt-out default condition, the default option was set to “I want to donate,” whereas for those in the control condition, the default option was set to “I don’t want to donate”. Next, we presented the participants with information about a previous donor: “According to the most up-to-date statistics, the last person who viewed the appeal chose to donate to this campaign a minute ago.”

Before they made the decision, participants were instructed to indicate their opinions about the appeal and about the previous donor. Among a set of filler questions, the participants responded to a three-item measure to assess the previous donor’s intrinsic motivation for helping (modified from the Perceived Intrinsic Motivation Scale of Berman, Levine, Barasch, & Small, 2015). These items were presented in Chinese. For the translation process, we recruited two graduates from the English department who were blind to the research purpose. Only several Chinese characters of their translations were different so we used their translation as the final version. “This donor was intrinsically motivated to donate to UNICEF,” “This donor had a genuine passion for helping poor children,” and “This donor sincerely cared about helping others.” (1 = strongly disagree, 7 = strongly agree). We averaged the three items to create an index of the donor’s inferred intrinsic motivation (Cronbach’s α = .84). After the participants finished the survey, we debriefed them and explained that the intention of the study was to investigate people’s perception of different types of donors, so we would not collect any money from them. The participants then received their monetary compensation and were thanked.

Results and Discussion

Results of an independent samples t test show that participants viewed the donor as less intrinsically motivated when the prosocial behavior was nudged with the “I want to donate” default option ($M = 4.89, SD = 1.22$) than when there was no such nudge; $M = 5.50, SD = 1.28, t(139) = -2.89, p = .004, d = 0.49$. There was no significant gender difference in observers’ perception of donors’ motives; $M_{men} = 5.14, SD = 1.22; M_{women} = 5.23, SD = 1.32, t(139) = -0.41, p = .69$. Previous researchers (Johnson & Goldstein, 2004) have demonstrated the effectiveness of the “I want to donate” default in nudging prosocial behavior; in contrast, we found that observers doubted the intrinsic motivation of donors when there was an “I want to donate” default option. This finding suggests that, in observers’ eyes, being nudged by an “I want to donate” default undermines others’ perception of donors’ good deeds.

Study 3

In Study 3 we tested our hypothesis with another type of nudge that is commonly used in the prosocial domain: social conformity. Specifically, we measured observers’ inferences regarding a donor’s intrinsic motivation and altruistic personality. To enhance the reliability of the measurement, we included items for both intrinsic and extrinsic motivation inferences. We predicted that when a prosocial behavior is nudged by a social conformity message and a person donates after seeing this message, they will be perceived by observers as less intrinsically motivated to help and less altruistic than donors who do not receive a nudge.

Method

Participants. Participants were 267 students from various disciplines at Fudan University (184 women, 83 men; $M_{age} = 20.14$ years, $SD = 1.54$). They received financial compensation of 20 RMB (US$3) for taking part in this research.

Procedure. We adopted a two-group (nudging-with-social-conformity message vs. control) between-
subjects study design. Participants were recruited to complete an online survey that was irrelevant to our main study, then they were shown a webpage of a charity appeal launched by the Student Union for raising money to help impoverished children in China. To manipulate the nudge of social conformity, participants in the nudging-with-social-conformity message condition were shown that 75% (vs. 5% in the control condition) of people who had viewed this page had donated. We chose these numbers based on previous findings that targets in the 70%–75% range are most effective in motivating people to comply with the majority (Anik, Norton, & Ariely, 2014; Gerber & Rogers, 2009; Goldstein et al., 2008). The webpage also showed participants that the person who had most recently viewed this charity appeal had just made a donation.

**Measures.** The participants were asked to indicate their agreement with the following five statements regarding the person who had most recently viewed and donated to the charity appeal: “This donor was intrinsically motivated to donate,” “This donor had a genuine passion for helping poor children,” “This donor sincerely cared about helping others,” “This person donated to the campaign to improve his/her personal image,” and “This person donated for social conformity reasons.” (1 = strongly disagree, 7 = strongly agree). We reverse coded the last two items and averaged the five ratings to create an index of the inferred intrinsic motivation of the donor (Cronbach’s α = .76).

We also asked participants to indicate the extent to which they felt this donor was (a) a person with an altruistic personality and (b) a kind-hearted person (1 = not at all, 7 = extremely). The scores for these two items were averaged to create an index of perceived altruistic personality (Cronbach’s α = .95).

**Results and Discussion**

Results of an independent samples $t$ test show that participants perceived the most recent donor as less intrinsically motivated when his/her prosocial behavior was nudged by a social-conformity message ($M = 4.49, SD = 0.82$) than when there was no such nudge; $M = 4.94, SD = 0.86, t(265) = -4.32, p < .001, d = 0.54$. There was no significant gender difference in observers’ perception of donors’ motives; $M_{\text{men}} = 4.76, SD = 0.99; M_{\text{women}} = 4.69, SD = 0.81, t(265) = 0.66, p = .51$. Moreover, the participants were less likely to perceive the donor as having an altruistic personality when the donor’s helping was nudged by a social-conformity message ($M = 4.99, SD = 1.18$) than when there was no nudge ($M = 5.41, SD = 1.08, t(265) = -3.04, p = .003, d = 0.37$. There was also no gender difference in altruistic personality perceptions ($M_{\text{men}} = 5.49, SD = 1.28; M_{\text{women}} = 5.21, SD = 1.09), $t(265) = 0.15, p = .88$.

**General Discussion**

Nudges are powerful tools to encourage prosocial behavior in different contexts, such as organ donation (Johnson & Goldstein, 2003), environmental protection (Goldstein et al., 2008), and charitable giving (Thaler & Sunstein, 2009). Although the effectiveness of prosocial nudges has been well documented, we considered the following question from the observer’s perspective: Compared with spontaneous prosocial behavior, do observers perceive a donor as less intrinsically motivated to help others when the donor’s prosocial action is a product of nudging? We found that the answer is “Yes.”

The results of our three experiments indicate that being nudged to donate undermines a donor’s intrinsic motivation in observers’ eyes. In Study 1 we found that observers were more likely to attribute a donor’s good deed to ulterior motives when the prosocial behavior was nudged by public recognition (vs. control). The results of Study 2 show that observers perceived the donor as less intrinsically motivated to help others if the donation was nudged by an opt-out default option. In Study 3 we further demonstrated that nudging prosocial behavior with social-conformity messages can also undermine observers’ inference of donors’ intrinsic motivation.

These findings suggest the unexpected consequences of nudges. As we have demonstrated, nudges not only
operate as a tool of behavioral intervention but also have social cognitive functions. Nudges may alter people’s behavior. At the same time, the phenomenon of being nudged changes the meaning of behavior from the perspective of the observer. That is, nudges have important social properties in addition to their intervention functionality. Thus, when a prosocial action is a product of a nudge, observers tend to perceive the nudged prosocial action (vs. a spontaneous prosocial action) as a product of external intervention rather than donors’ own genuine desire; consequently, observers undervalue donors’ intrinsic motivation.

Our findings enrich understanding of the effects of nudges because we have gone beyond the previous interventionist perspective and explored the unexpected social cognitive consequences of prosocial nudges from the observer’s perspective. On the one hand, nudges are powerful tools to achieve nonforced compliance; on the other hand, they imply contextual information on specific behavior that could provide an important input for social perception (Bandura, 1977; Pyszczynski & Greenberg, 1987). Echoing the literature on the social perception model and attribution theory (Bem, 1967, 1972; Jones & Davis, 1965), we found that individuals infer donors’ motives and form perceptions of an altruistic personality by observing whether the donor’s prosocial action is the product of nudges.

Our results also enhance the literature on altruism (Berman et al., 2015; Henderson, Huang, & Chang, 2012). We have demonstrated that the extent to which a person is altruistic is not only evaluated by the extent to which his or her prosocial action helps others but is also inferred from the context of the specific prosocial action (e.g., whether it is a product of nudges). From this perspective, the perceived value of prosocial behavior is affected by the situational context in which the contributors lend assistance; specifically, whether they have been nudged.

There are some limitations to this study. One limitation of our research is the generalizability of our results to other populations. The participants we employed in this research were all university students in China. Because people from different cultures appear to have varied prosocial behavior patterns (Luria, Cnaan, & Boehm, 2015), future research should extend the investigation to a wider population.

Although we have demonstrated an unexpected consequence of nudges from the observer’s perspective, the behavioral consequences of this effect remain unclear. Because being nudged to donate undermines the perceived intrinsic motivation of the donor, we speculate that it may also weaken the social-influence power of the donor. Therefore, observers may be less likely to follow the example of donors’ prosocial action if they are nudged. If this is true, then the overall effect of nudges, which includes both a direct behavioral intervention effect (e.g., a positive impact on the donor’s behavior) and an unexpected undermining effect (e.g., a negative impact on observers’ subsequent behavior), should be evaluated carefully. Future researchers could consider this unexpected consequence of nudging and explore the conditions under which nudges could exert an overall positive effect in encouraging prosocial behavior.

Further, if potential donors realize that being nudged undermines the value of their prosocial action in others’ eyes, will they still behave in response to nudges? Exploring the circumstances under which potential donors are more likely to recognize nudges and the consequences of being nudged as well as how the awareness of the consequences of being nudged influences subsequent prosocial behavior could prove to be a fruitful avenue for future research.

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References

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