

# Descriptive norms for me, injunctive norms for you: Using norms to explain the risk gap

Xi Zou\*

Krishna Savani<sup>†</sup>

## Abstract

People are more likely to rely on descriptive norms (i.e., what their peers are doing) when deciding whether to take a risk themselves than when deciding whether to recommend others to take a risk. We proposed and found that people also attend to normative information when making risk recommendations to others, but in this case they attend to a different type of normative information — injunctive norms (i.e., whether their peers approve of this behavior). Descriptive norm plays a bigger role in influencing people’s own decisions, whereas injunctive norm plays a bigger role in influencing people’s recommendations to others. This research demonstrates the importance of differentiating descriptive versus injunctive norms in risky decision-making and provides further evidence that perceived norms significantly influence risky decision-making.

Keywords: risk; decision-making; social norm; descriptive norm; injunctive norm

## 1 Introduction

The *risk gap* refers to the phenomenon that the extent to which people recommend others to engage in risky behaviors differs systematically from the extent to which they are themselves willing to engage in the same risky behaviors (e.g., (Beisswanger et al., 2003; Kray & Gonzalez, 1999; Ubel et al., 2011)). Recent research has provided a novel solution to this puzzle — when deciding whether to engage in the risky behavior themselves, people focus on the extent to which their peers are engaging in the risky behavior (i.e., the descriptive norm), but when recommending the same behavior to others, people are significantly less influenced by their peers’ behaviors (Helfinstein et al., 2015). For example, people are more likely to jaywalk if they see most others jaywalking; however, when recommending others whether or not to jaywalk, they are not influenced by whether or not most others are jaywalking. However, although people ignore what their peers are doing when recommending risky behaviors to others, it does not necessarily mean that they are not considering any normative information. In this research, we argue that people do attend to normative information when making recommendations to others, but that different

types of normative information — descriptive norms vs. injunctive norms — influence their own decisions as opposed to their recommendations to others, respectively.

People’s perceptions of what their peers are doing capture one form of normative information, namely *descriptive norms*, which refers to the extent to which others are engaging in a given behavior. Another important form of normative information is *injunctive norms*, which refers to the extent to which most others would approve or disapprove of a given behavior (Cialdini et al., 1990; Kallgren et al., 2000). Prior research on individual risky decision-making has focused largely on descriptive norms. For example, peers’ engagement in risky behaviors predicts individuals’ own likelihood of engaging in those behaviors in various domains, such as smoking (Christakis & Fowler, 2008; Kobus, 2003) and alcohol consumption (Borsari & Carey, 2001; Rosenquist et al., 2010). Receiving information that a friend or a family member engaged in a risky behavior (e.g., bungee jumping) dramatically increases participants’ own likelihood of engaging in the same risky behavior (Bursztyrn et al., 2014).

Although people’s own risky behaviors are influenced by what they believe their peers would do in a similar situation, descriptive norms have been found to have little effect when people’s make recommendations to others (Helfinstein et al., 2015). In that study, participants indicated either their own willingness to engage in various risky activities (i.e., invest in risky stocks, drive without a seat belt, bungee jump), or indicated their willingness to recommend engaging in the same risky activities to a loved one. In the same study, participants also rated how many of the people they know engaged in the same risky activities. The study found that participants’ perception of their peers’ risky behavior were positively correlated with their own willingness to engage in

---

This research was supported by a Startup Grant awarded by Nanyang Technological University to Xi Zou, and a Nanyang Assistant Professorship grant awarded by Nanyang Technological University to Krishna Savani. We thank Li Shi Tan, Valentina Lim, and Farah Sabrina for invaluable research assistance.

Copyright: © 2019. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.

\*Division of Leadership, Management, and Organisation, Nanyang Business School, Nanyang Technological University. Email: zou.xi@ntu.edu.sg.

<sup>†</sup>Division of Leadership, Management, and Organisation, Nanyang Business School, Nanyang Technological University.

the same behavior, but were uncorrelated with their willingness to recommend the same behaviors to their loved one.

Although that study examined the influence of descriptive norms, we hypothesize that, when making recommendations to others, people attend to injunctive norms. Two lines of research are consistent with this hypothesis. First, when making decisions that do not require cognitive elaboration, people are more likely to follow descriptive norms, but when making decisions that require cognitive elaboration, people are more likely to follow injunctive norms (Kredentser et al., 2012). As people are concerned about defending their decisions when making recommendation to others (Kray & Gonzalez, 1999; Ubel et al., 2011), which is likely to involve cognitive elaboration, injunctive norms should have a stronger impact when people make recommendations to others than when they make decisions for themselves.

Second, people pay more attention to injunctive norms rather than descriptive norms when their goal is to build and maintain social relationships (Cialdini & Trost, 1998). For example, when primed with words associated with descriptive norms, people were faster at identifying words related to accuracy and efficiency, whereas when primed with injunctive norms, they were faster at identifying words related to social approval (Jacobson et al., 2010). In the case of the risk gap, people are likely to care more about the relationship when making recommendations to others than when deciding for themselves. Thus, we would expect that injunctive norms, compared to descriptive norms, would have a stronger influence on people's recommendations to others than when they make decisions for themselves. To test this hypothesis, we conducted a study that closely follows Helfinstein et al. (2015) method.

## 2 Method

We hypothesized an interaction between a within-participant factor (perceived norms) and two between-participant factors, norm type (injunctive vs. descriptive) and decision type (deciding for self vs. making recommendations to other). We maximized statistical power by using multiple trials, using mixed within- and between-participant design, and treating trials as a random factor (Judd et al., 2012).

### 2.1 Participants

A survey seeking 400 US residents was posted on Amazon Mechanical Turk. In response, 415 participants (244 women, 156 men, 4 other, 11 unreported; mean age 37.25 years) completed the study.<sup>1</sup> Participants were randomly assigned

<sup>1</sup>Existing HLM power analyses tools (Bosker et al., 2003; Raudenbush et al., 2011) do not provide a method for determining a participant sample size based on the effect size of cross-level interactions and desired power. Therefore, we decided on a sample size of 100 per cell.

to one cell of a 2 (descriptive vs. injunctive norms) X 2 (self vs. other) design.

### 2.2 Measures

We presented the participants with 30 risky behaviors from the Domain Specific Risk-taking Scale (Blais & Weber, 2006). This scale captures risk-taking in five domains, including social, recreation, health/safety, financial, and ethics. First, all participants were asked to rate their perceived norms for each behavior. However, the type of perceived norms that participants rated varied by condition. Those in the descriptive norms condition were asked: "Please indicate to what extent your peers would engage in the described activities or behaviors below." They were then presented with the 30 risky behaviors and asked to rate each on a 7-point scale ranging from "−3 Definitely would not" to "3 Definitely would." Those in the injunctive norms condition were asked: "Please indicate to what extent your peers would think people should (or should not) engage in the described activities or behaviors below." They were presented with the same 30 behaviors and a rating scale ranging from "−3 Definitely should not" to "3 Definitely should." The order of the 30 items was independently randomized for each participant.

Next, the participants in the self condition were asked to rate the question: "Please indicate the likelihood that you would engage in the described activity or behavior if you were to find yourself in that situation," on a scale ranging from "1 extremely unlikely" to "7 extremely likely." Those in the other condition were asked to rate the question, "Please indicate the likelihood that you would encourage a loved one to engage in the described activity or behavior if you were to find your loved one in that situation," on the scale ranging from "1 extremely unlikely" to "7 extremely likely."

Finally, following Helfinstein et al. (2015), we collected data on two control variables. All participants were asked to rate the perceived riskiness of each behavior (i.e., "How risky do you perceive this activity to be?") on the scale ranging from "1 Not at all risky" to "7 Extremely risky." Further, all participants were asked to rate the perceived benefits of each behavior (i.e., "Please indicate the benefits you would obtain from each situation") on a scale ranging from "1 no benefits at all" to "7 great benefit." The survey ended with a list of demographic background questions.

## 3 Results

As an initial examination of our hypothesis, for each participant, we computed the correlation between the independent variable (i.e., participants' perceptions of the norm) and the outcome variable (i.e., their likelihood of engaging in / recommending the risky behavior), across the 30 items. Of the 415 participants, six participants gave uniform re-

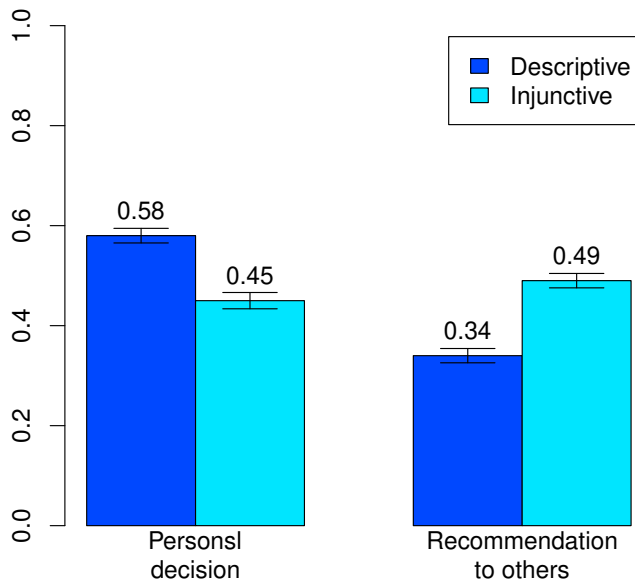


FIGURE 1: Predicted beta (with standard error) of perceived norm effect.

sponses to all the items used to measure the independent variable and/or outcome variable, and were thus dropped from the analysis. The final sample size was 409 (238 women, 156 men, 15 unidentified; 309 White/Caucasian, 35 African American, 16 Latin American, 13 Native American, 30 South/East/Southeast Asian, 6 unidentified; mean age 37.25 years, SD = 0.61).

Consistent with our hypothesis, in the *self* condition, participants' decisions to engage in the risky action were more strongly predicted by the perceived *descriptive* norm, than by the perceived *injunctive* norm. By contrast, in the *other* condition, participants' decisions to recommend the risky action were more strongly predicted by the perceived *injunctive* norm, than by the perceived *descriptive* norm. The mean correlations with responses were:

Self, descriptive:  $r = .67$ , SE = .03, 95% CI [.62, .73]

Self, injunctive:  $r = .63$ , SE = .02, 95% CI [.58, .69]

Other, descriptive:  $r = .59$ , SE = .03, 95% CI [.54, .64]

Other, injunctive:  $r = .72$ , SE = .02, 95% CI [.67, .78]

Figure 1 summarizes this pattern of results for a parallel analysis using regressions instead of correlations.<sup>2</sup>

To test whether the difference in the correlation score differs across conditions, we regressed each participant's correlation score on the decision type condition (making recommendations to other =  $-.5$ , deciding for self =  $.5$ ), the

type of norm condition ( $-.5$  = injunctive norms,  $.5$  = descriptive norms), and the interaction of these two variables. We found a significant interaction,  $b = 0.17$ , 95% CI [.07, .27], SE = .052,  $t = 3.33$ ,  $p < .001$ . To unpack the interaction, we regressed the correlation score on the decision type in each of the norm type condition respectively. When making recommendations to others, injunctive norms show a significantly stronger influence than descriptive norms ( $b = -0.13$ , 95% CI [-.21, -.06], SE = .04,  $t = -3.55$ ,  $p < .001$ ). When deciding for self, the two types of norms showed no difference in the influencing power ( $b = 0.04$ , 95% CI [-.03, .11], SE = .04,  $t = 1.11$ ,  $p = .267$ ). Next, we regressed the correlation score on the norm type in each of the decision type condition respectively. Descriptive norms showed as a significantly stronger impact when participants were making decision for themselves than making recommendations to others ( $b = 0.08$ , 95% CI [.004, .16], SE = .04,  $t = 2.09$ ,  $p = .038$ ). By contrast, injunctive norms showed a significantly stronger impact when participants were making recommendations to others than making decision for themselves ( $b = -0.09$ , 95% CI [-.16, -.02], SE = .033,  $t = -2.69$ ,  $p = .0078$ ).<sup>3</sup>

## 4 Discussion

The current findings demonstrate that different types of normative information influence individuals' decisions to engage in a risky behavior themselves and to recommend this behavior to others. Consistent with prior research (Helfinstein et al., 2015), we found that the extent to which people think that their peers' are engaging in various risky behaviors has a stronger influence on people's own decisions about whether to engage in the risky behaviors than on whether they would recommend others to engage in the same behaviors. However, expanding the work of Helfinstein et al. (2015), we found that different types of normative information have different decision weights when people make recommendation to others than when making their own decisions — the extent to which they think their peers would approve a given risky behavior. Thus, the conclusion that normative information is irrelevant when people recommend risky behaviors to others was premature; instead, people focus on different types of normative information when making decisions for themselves and when making recommendations to others. Further, our findings suggest that, when people seek independent advice or recommendations from others, instead of just an individual's personal assessment, they are also exposed to second hand normative biases.

<sup>2</sup>Specifically, we first regressed the risky behaviour outcome on perceived norm, controlling for perceived risk and perceived benefit, treating the 30 trials of each participant as a separate set. In this step, we identified one coefficient for the perceived norm of each participant. Then, we regressed this coefficient on the decision type, norm type, and their interaction.

<sup>3</sup>We also examined the correlation between the perceived norm and the outcome measure for each of the 30 items, across the participants. That is, we generated 30 correlations for each of the four relevant conditions: self-descriptive, self-injunctive, other-descriptive, other-injunctive. Pair-wise t-test of these four lists of correlations showed no significant difference, suggesting that there is no need to conduct analysis for each item separately.

Our findings contribute to the broader field of decision-making for self versus others, which seems to have concluded that people make more rational decisions when making recommendations to others than deciding for themselves (e.g. (Beisswanger et al., 2003; Helfinstein et al., 2015; Zikmund-Fisher et al., 2006)). For example, people display fewer cognitive biases (Ubel et al., 2011) and place greater weight on more important factors (Kray & Gonzalez, 1999) when advising others than when deciding for themselves. However, in the case of risky decisions, our findings indicate that it is not necessarily the case that recommendations to others are better or worse than decisions for the self; instead, these two types of decisions are influenced by different normative information. An important question for future research is whether existing asymmetries in self-other decision-making might also be due to differential effect of descriptive vs. injunctive norms rather than more vs. less biased decision-making.

The current findings highlight the importance of considering social influence in the research of risky decision-making. For example, studies using data from the Health and Retirement Study administered by the Institute for Social Research at the University of Michigan showed that investors find the market more attractive and are more likely to buy stocks (compared to relatively less risky options such as investing in bonds) when more of their peers participate (Hong et al., 2004; Ivkovic & Weisbenner, 2007). In these studies, the perceived peer behavior is akin to the descriptive norm.

Future studies should also examine both the descriptive and injunctive norms, as well as involving behaviors such as making recommendations to others. Although we argued that people's perceived norms influenced their own risky decisions and their recommendations to others, future studies should take a closer look at the causal mechanisms. Results from the current study are correlational. Future studies should manipulate the perceived norms and ask whether it directly causes shifts in risk preference. Further, future studies should also examine the sources of people's perceived norms. Are these perceptions relatively accurate, or are they systematically biased in certain directions?

To conclude, the pervasive effect of normative information is relevant not only to our own decisions to engage in a risky behavior, but also to our recommendations to others. The current study identifies an important influence of injunctive norms when people make recommendations to others. Perceptions of whether a risky behavior is approved or disapproved by others influence the likelihood that individuals will recommend others to engage in the behavior. Further, the effect of injunctive norm on risky behavior recommendation is independent of perceived risk and perceived benefits of the behavior. Overall, our finding demonstrates the importance of differentiating descriptive and injunctive norms. We call for future research to compare and contrast the influence of these two different types of norms on mak-

ing decisions other than just risky decisions, considering a wider range of situations and a wider range of tasks.

## References

- Beisswanger, A. H., Stone, E. R., Hupp, J. M., & Allgaler, L. (2003). Risk taking in relationships: Differences in deciding for oneself versus for a friend. *Basic and Applied Social Psychology*, *25*, 121–135, [https://doi.org/http://dx.doi.org/10.1207/S15324834BASP2502\\_3](https://doi.org/http://dx.doi.org/10.1207/S15324834BASP2502_3).
- Blais, A. R. & Weber, E. U. (2006). A domain-specific risk-taking (DOSPERT) scale for adult populations. *Judgment and Decision Making*, *1*, 33–47.
- Borsari, B. & Carey, K. B. (2001). Peer influences on college drinking: A review of the research. *Journal of Substance Abuse*, *13*, 391–424, [https://doi.org/http://dx.doi.org/10.1016/S0899-3289\(01\)00098-0](https://doi.org/http://dx.doi.org/10.1016/S0899-3289(01)00098-0).
- Bosker, R. J., Snijders, T. A. B., & Guldmond, H. (2003). PINT (Power IN Two-level designs): Estimating standard errors of regression coefficients in hierarchical linear models for power calculations. *User's Manual Version*, *2*, 1.
- Bursztyn, L., Ederer, F., Ferman, B., & Yuchtman, N. (2014). Understanding Mechanisms underlying Peer Effects: Evidence From a Field Experiment on Financial Decisions. *Econometrica*, *82*, 1273–1301, <https://doi.org/https://doi.org/10.3982/ECTA11991>.
- Christakis, N. A. & Fowler, J. H. (2008). The collective dynamics of smoking in a large social network. *The New England Journal of Medicine*, *358*, 2249–2258, <https://doi.org/http://dx.doi.org/10.1056/NEJMsa0706154>.
- Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, *58*(6), 1015–1026 <https://doi.org/10.1177/01461672002610009>.
- Cialdini, R. B. & Trost, M. R. (1998). Social influence: Social norms, conformity and compliance. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology*. (pp. 151–192). New York, NY, US: McGraw-Hill.
- Helfinstein, S. M., Mumford, J. A., & Poldrack, R. A. (2015). If all your friends jumped off a bridge: The effect of others' actions on engagement in and recommendation of risky behaviors. *Journal of Experimental Psychology: General*, *144*, 12–17, <https://doi.org/http://dx.doi.org/10.1037/xge0000043>.
- Hong, H., Kubik, J. D., & Stein, J. C. (2004). Social interaction and stock-market participation. *Journal of Finance*, *59*, 137–163, <https://doi.org/https://doi.org/10.1111/j.1540-6261.2004.00629.x>.
- Ivkovic, Z. & Weisbenner, S. (2007). Information Diffusion Effects in Individual Investors' Common Stock Purchases: Covet Thy Neighbors' Investment Choices. *The Review of*

- Financial Studies*, 20, 1327–1357, <https://doi.org/https://doi.org/10.1093/rfs/hhm009>.
- Jacobson, R. P., Mortensen, C. R., & Cialdini, R. B. (2010). *A body obliged: The role of self-regulation in normative social influence*. Unpublished manuscript. Tempe, AZ: Arizona State University.
- Judd, C. M., Westfall, J., & Kenny, D. A. (2012). Treating stimuli as a random factor in social psychology: A new and comprehensive solution to a pervasive but largely ignored problem. *Journal of Personality and Social Psychology*, 103, 54–69, <https://doi.org/http://dx.doi.org/10.1037/a0028347>.
- Kallgren, C. A., Reno, R. R., & Cialdini, R. B. (2000). A focus theory of normative conduct: When norms do and do not affect behavior. *Personality and Social Psychology Bulletin*, 26(8), 1002–1012, <https://doi.org/http://dx.doi.org/10.1177/01461672002610009>.
- Kobus, K. (2003). Peers and adolescent smoking. *Addiction*, 98, 37–55, <https://doi.org/http://dx.doi.org/10.1046/j.1360-0443.98.s1.4.x>.
- Kray, L. & Gonzalez, R. (1999). Differential weighting in choice versus advice: I'll do this, you do that. *Journal of Behavioral Decision Making*, 12(3), 207–217, [https://doi.org/http://dx.doi.org/10.1002/\(SICI\)1099-0771\(199909\)12:3<207::AID-BDM322>3.0.CO;2-P](https://doi.org/http://dx.doi.org/10.1002/(SICI)1099-0771(199909)12:3<207::AID-BDM322>3.0.CO;2-P).
- Kredentser, M., Fabrigar, L., Smith, S., & Fulton, K. (2012). Following What People Think We Should Do versus What People Actually Do. *Social Psychological and Personality Science*, 3(3), 341–347, <https://doi.org/10.1177/1948550611420481>.
- Raudenbush, S. W., Bryk, A. S., & Congdon, R. (2011). *HLM 7.00 for Windows [Computer software]*. Lincolnwood, IL: Scientific Software International, Inc.
- Rosenquist, J. N., Murabito, J., Fowler, J. H., & Christakis, N. A. (2010). The spread of alcohol consumption behavior in a large social network. *Annals of Internal Medicine*, 152, 426–433, <https://doi.org/http://dx.doi.org/10.7326/0003-4819-152-7-201004060-00007>.
- Ubel, P. A., Angott, A. M., & Zikmund-Fisher, B. J. (2011). Physicians recommend different treatments for patients than they would choose for themselves. *Journal of the American Medical Association*, 171, 630–634.
- Zikmund-Fisher, B. J., Sarr, B., Fagerlin, A., & Ubel, P. A. (2006). A matter of perspective: Choosing for others differs from choosing for yourself in making treatment decisions. *Journal of General Internal Medicine*, 21, 618–622, <https://doi.org/http://dx.doi.org/10.1111/j.1525-1497.2006.00410.x>.