

# Social distance decreases responders' sensitivity to fairness in the ultimatum game

Hyunji Kim\*    Simone Schnall†    Do-Joon Yi‡    Mathew P. White§

## Abstract

Studies using the Ultimatum Game have shown that participants reject unfair offers extended by another person although this incurs a financial cost. Previous research suggests that one possible explanation for this apparently self-defeating response is that unfair offers involve strong negative responses that decrease the chances of responders accepting offers that would objectively constitute a net profit. We tested the hypothesis that one way of reducing responders' rejections of unfair offers is through increased psychological distance, so that participants move away from the concrete feeling of being unfairly treated. Social distance was manipulated by having participants play the Ultimatum Game either for themselves, or for another person. Compared to deciding for one's self or a close social contact, participants showed less sensitivity to fairness when deciding for a stranger, as indicated by fewer rejected unfair offers. We suggest that social distance helps people move beyond immediate fairness concerns in the Ultimatum Game.

Keywords: ultimatum game; psychological distance; hot cold empathy gap; emotion; decision making.

## 1 Introduction

In everyday life feelings often serve adaptive purposes in regulating people's interactions. For example, a sudden experience of irritation at the negotiation table might indicate disapproval of the other person's proposal, and result in a request for better terms and conditions. Going with one's feelings can therefore be useful in securing a better outcome. At other times, however, one might regret the choices made as a result of such responses. For example, a disproportionate outburst of anger, even if seemingly justified in a moment of frustration during the negotiation process, may do long-term damage to an otherwise positive business relationship. Thus, although in many contexts feelings are adaptive because they provide relevant information about how to engage with one's immediate environment, and what actions to take (Damasio, 1994; Schwarz & Clore, 2007), at other times freeing oneself from spontaneous negative responses might lead to better outcomes.

One experimental paradigm to study suboptimal decisions resulting from spontaneous feelings is the Ultima-

tum Game (Güth, Schmittberger & Schwarze, 1982). In this game, a proposer makes an offer regarding how to split a sum of money, which can either be rejected or accepted by a responder. If the responder accepts, the split takes place as proposed; however, if the responder rejects, neither of the two individuals receives any money. A rational decision maker would accept any given offer, because in the interest of maximizing profit, getting something should always be better than getting nothing (Thaler, 1988). However, this is usually not the case. Being confronted with unfair offers can lead to negative affect and rejection of offers even when the offer is greater than zero (Pillutla & Murnighan, 1996; Sanfey, Rilling, Aronson, Nystrom & Cohen, 2003). Indeed, when considering unfair offers, people exhibit emotional arousal as reflected in increased skin conductance (van't Wout, Kahn, Sanfey & Alemen, 2006), larger electrodermal responses (Dunn, Evans, Makarova, White & Clark, 2012), and subtle expressions of facial disgust (Chapman, Kim, Susskind, & Anderson, 2009), and these reactions predict rejection rates of unfair offers. Further, a participants' decision to accept or reject unfair offers is correlated with activation in the anterior insula, a structure known to be involved in the experience of disgust (Sanfey et al., 2003). Experimentally manipulated moods can also sway whether participants accept or reject offers: induced sadness (Harlé & Sanfey, 2007) and induced anger (Andrade & Ariely, 2009) lead to higher rejection rates of unfair offers compared to neutral moods. Therefore, negative feelings seem to mediate the effect of unfair offers on rejection rates.

---

This research was supported by grant RES-000-22-4453 from the ESRC to S.S. and grant 2012-0006587 from the National Research Foundation of Korea to D.-J.Y.

Copyright: © 2013. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.

\*Department of Psychology, University of Cambridge, Downing Street, Cambridge, CB2 3EB, U.K. Email: hk340@cam.ac.uk.

†University of Cambridge

‡Yonsei University

§University of Exeter Medical School

Even if motivated by current emotional states, people's refusal of unfair treatment might have an adaptive purpose because punishing others enforces norms of fairness (Sanfey, Loewenstein, McClure, & Cohen, 2006). In other words, those who do not act fairly face exclusion from the group, and this prospect might act as a deterrent. This strategy, however, only makes sense under the premise that people repeatedly interact with each other, and that one keeps track of each individual's reputation as a fair cooperative partner. Yet, people reject unfair offers in the Ultimatum Game even in one-shot decisions in a laboratory, when they have no expectation of having repeated contact with the other person (Güth et al., 1982; Hoffman, McCabe, & Smith, 1996). Under this circumstance the best strategy would be to accept any given offer in order to maximize one's overall profit. Why do people still turn down offers, and forgo their own small reward just to prevent the other person from getting a larger reward? One answer may lie in people's failure to appreciate the value of a given reward when they are too caught up in the current moment's concern for fairness. Indeed, people often make decisions guided by visceral reactions that might interfere with rational choices. For example, the "hot-cold empathy gap" (Loewenstein, 1996; 2000) describes the phenomenon that when in an emotional, "hot" state, such as when feeling angry, people find it difficult to imagine a more "cold", rational state, and this can bias their decision processes. However, by moving away from the current experience, decision making is more likely to be guided by "cold" processing. The gap between these two processes might help understand the underlying process of people's decision making during the Ultimatum Game: when participants are confronted with unfair offers, visceral reactions constitute "hot" processing, which places the feeling of being unfairly treated at the centre of attention. However, if we could produce a shift toward more "cold" processing, a different type of mind-set might guide participants to represent the given event with a more rational and goal-focused perspective that is removed from current experiences. In the present research, we suggest a way to achieve this, namely by increasing psychological distance. Next, we introduce a theoretical framework that suggests a way to cognitively move away from hot processing in order to facilitate "cold" processing.

### 1.1 Psychological distance as a method of facilitating "cold" processing

Much of the time, our minds are occupied with immediate goals, current activities and a focus on the self. However, human minds are also capable of transcending the present self, projecting oneself onto a past or future self, another self in a different place, and even onto other per-

sons' minds (Buckner & Carroll, 2007; Schacter & Addis, 2007; Spreng, Mar & Kim, 2009). This capability enables people to plan in advance, comprehend complex circumstances and understand others' behaviour. One way of doing this is to adopt a distant perspective: Psychological distance creates greater objectivity towards a target object or event, enabling us to represent a given situation in a more rational and general fashion, free from incidental concerns.

Many studies now confirm that people make judgments and decisions in a more self-controlled and far-sighted manner when they use a distant psychological perspective, rather than a close psychological perspective (e.g., Fujita, Trope, Liberman, & Levin-Sagi, 2006; Trope & Liberman, 2003, 2010). For example, participants chose advertisements appealing to their desired self rather than to their current needs under a distant perspective (Freytas, Langsam, Clark, & Moeller, 2008). Further, people prefer a larger later reward to a smaller immediate treat when a situation is framed under increased psychological distance (Trope & Liberman, 2000). Similarly, temptations are considered in more negative terms when applying a distant instead of immediate psychological perspective (Fujita et al., 2006).

We therefore propose that the Ultimatum Game can be interpreted in terms of psychological distance: When responders decide whether to accept an unfair offer they are influenced by the immediate feeling of being unfairly treated. Events that involve intense emotional arousal are more strongly associated with a proximate psychological distance than an increased psychological distance (Van Boven, Kane, McGraw & Dale, 2010; Watkins, Moberly & Moulds, 2008). One way of reducing responders' tendency to reject unfair offers in the Ultimatum Game might therefore be to increase psychological distance so that they can reinterpret the situation with an objective perspective. This might help participants move away from the experience of feeling unfairly treated and therefore become less sensitive to unfairness.

We tested the hypothesis that increased psychological distance allows responders in the Ultimatum Game to disengage from immediate fairness concerns caused by unfair offers. As a result, we expected participants to be more willing to accept unfair offers under increased psychological distance. To induce psychological distance, we manipulated social distance, which describes the subjective closeness toward a target person, and can vary from being very close to very distant (Nan, 2007; Trope & Liberman, 2003). For example, a close friend feels socially closer than a mere acquaintance, and his or her intentions are therefore more easily understood than those of the relative stranger. At the same time, a close friend's behaviour may still be less understandable than one's own behavior. Sometimes, however, this subjective closeness

may interfere with adaptive decision making, and we believe the Ultimatum Game constitutes such a situation, because when making decisions for oneself, on the most immediate level of social distance, strong reactions to unfair offers may get in the way of accepting unfair, yet financially profitable offers.

We induced three types of social distance involving either the self, a close contact (best friend) or a distant contact (stranger), and participants made Ultimatum Game decisions either on behalf of this target person, or for themselves. Based on research showing that people judge and perceive close others' intentions and behaviours as similar to their own (Ames, 2004; Mitchell, Banaji, & Macrae, 2005; Prentice, 1990), we expected decisions for the close contact to be more similar to those for the self than decisions made for a stranger. More specifically, we predicted higher levels of acceptance of unfair offers for a distant social target, compared to the close social contact, or for oneself.

## 2 Method

Participants played the Ultimatum Game on a computer screen with a hypothetical proposer, and made decisions by pressing a button to accept or reject the given offer, imagining that they were playing the game for a target person. We used three targets that implied increasing levels of social distance: Self, best friend, and stranger. Participants were told that all offers were independent from each other, such that each trial was a one-shot decision, and a rejection or acceptance of an offer did not affect any subsequent offers.

### 2.1 Participants

Twenty-four undergraduate students (14 males) at Yonsei University participated in exchange for course credit.<sup>1</sup>

### 2.2 Materials

**Induction of Psychological Distance.** Social distance was induced using the procedure developed by Jones and Rachlin (2006). Participants were instructed to imagine creating a list of 100 people closest to them, ranging from the dearest friend or family member at position 1 to a mere acquaintance at position 100. To further activate thoughts related to the target person participants were asked to imagine five different events or thoughts that might occur to the target person at the present moment, and write down those events or thoughts on a sheet

of paper. This task was timed to 3 minutes. For example, for the "Self" condition, participants wrote "I'm thinking of the exam I have to prepare for next week." or for the "Best Friend" condition, "He is probably going out for lunch with his girlfriend."

**Ultimatum Game.** Two amounts of money were used to test whether the effect was different for high or low amounts: 10,000 and 40,000 Korean won (approximately equivalent to 10 and 40 US dollars). This allowed us to explore whether different amounts of money at stake might interact with either offer fairness or social distance. For instance, it is conceivable that once offers become larger in absolute terms while the level of fairness remains the same, people may be more willing to accept unfair offers. There were 10 different ratios of offers for each amount, ranging from fair (5:5) to very unfair offers (0.5:9.5). Thus, each condition consisted of 20 trials (2 Amounts x 10 Ratios). The offers were presented in an increasing (i.e., from the very unfair to the fair offer) or a decreasing (i.e., from the fair offer to the very unfair offer) fashion randomly chosen for each amount.

Each participant received the "Self", "Best Friend" and "Stranger" conditions counterbalanced for order. On top of the computer screen, participants saw "You", "1<sup>st</sup> person on the list" or "100<sup>th</sup> person on the list" in each social distance condition. Offers were presented on the screen. For example, in the "Self" an offer would be phrased as "Splitting the sum of 10,000 won, the opponent takes 7,000 won. You receive 3,000 won. What would you do?" whereas in the "Best Friend" or "Stranger" conditions, participants read "Splitting the sum of 10,000 won, the opponent takes 7,000 won. The target person receives 3,000 won. If you were in the position of the target person, what would be your decision?"

### 2.3 Procedure

The study used a fully within-participants design. An experimenter explained how to play the Ultimatum Game and guided participants into an experimental cubicle. Each participant was exposed to three social distance conditions: "Self", "Best Friend" and "Stranger", with order counterbalanced across participants. Prior to implementing each social distance condition, participants completed the induction of psychological distance described above. For the "Self" condition, participants were instructed to imagine that they were playing the game and making hypothetical decisions for themselves, whereas for "Best Friend" and "Stranger" conditions, participants imagined that the target person was playing the Ultimatum Game, and they made decisions for that target person. Participants responded by pressing a keyboard button. At the end of the experiment, participants were debriefed and

<sup>1</sup>Although no age data were collected in Experiment 1 all participants were taking undergraduate courses at the time of the experiments, suggesting ages ranging between 18 and 23.

probed for suspicion regarding the purpose of the study. No participants guessed the hypothesis of the study.

## 2.4 Results

A 10 (Offer: 5:5 to 0.5:9.5) by 3 (Target: Self, Friend, Stranger) by 2 (Amount: 10,000 vs 40,000 won) fully repeated-measures ANOVA was conducted. Mauchly's test indicated that the assumption of sphericity had been violated for the main effects of Target,  $\chi^2(2) = 6.33, p = .04$ , and Offer,  $\chi^2(44) = 191.05, p < .001$ . Therefore, degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ( $\epsilon = .80$  for the main effect of condition and  $.31$  for the main effect of offer). There was a main effect of offer, suggesting that participants' acceptance rate decreased as offers became more unfair,  $F(2.80, 64.45) = 35.11, p < .001, \eta^2 = .59$  (see Figure 1 for means, collapsed across amounts). This effect of rejection of unfair offers is consistent with earlier findings for the Ultimatum Game (e.g., Güth et al., 1982; Camerer & Thaler, 1995).

More importantly, however, the main effect of target person was also significant,  $F(1.60, 36.80) = 4.51, p = .02, \eta^2 = .06$ . Within-subjects contrasts revealed that acceptance rates for the "Stranger" condition were higher than for the "Best Friend" condition,  $F(1, 23) = 5.01, p = .04, \eta^2 = .13$ , and the "Self" condition  $F(1, 23) = 6.62, p = .02, \eta^2 = .20$ . In contrast, acceptance rates for the "Self" and "Best friend" conditions did not differ,  $F(1, 23) = .094, p = .76, \eta^2 = .004$ . The only significant interaction was between Amount and Offer,  $F(1, 23) = 2.94, p = .03, \eta^2 = .09$ , showing a steeper decrease in acceptance rate for 10,000 won compared to 40,000 won, indicating that participants responses were more sensitive to unfairness when the amount was smaller. The main effect of amount was not significant,  $F(1, 23) = 3.05, p = .09, \eta^2 = .09$ , neither its interaction with the social distance condition,  $F(1.83, 41.97) = .91, p = .40, \eta^2 = .03$ .

## 3 Discussion

As hypothesized, acceptance rates in the Ultimatum Game were significantly higher when participants made decisions for a stranger compared to decisions for themselves or their best friend. In other words, participants were more willing to accept unfair offers when the recipient was represented in a more distant manner rather than in a proximate manner. The results thus support the idea that social distancing leads people to be more free from concerns related to unfairness. We argue that these results are due to a more "objective" perspective induced by increased psychological distance. Our findings are consistent with previous research suggesting that under in-

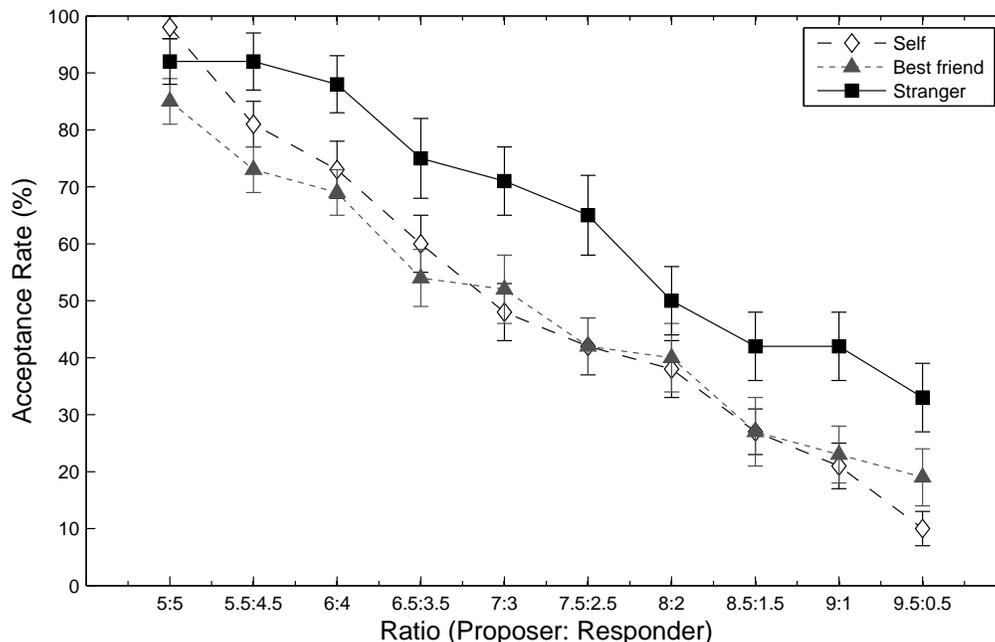
creased psychological distance, people make more adaptive and profitable choices (Fujita et al., 2006; Metcalfe & Mischel, 1999; Trope & Liberman, 2000). We extend previous research and suggest that people make decisions that are less sensitive to fairness when they move beyond situational concerns.

Interestingly, the "Best Friend" condition did not differ from the "Self" condition in terms of participants' acceptance rate. This suggests that the subjective social distance towards their best friends was not enough to induce functionally sufficient distance. Indeed, people tend to judge similar others' intentions based on their own thoughts and beliefs (Mitchell et al., 2005), and perceive close contacts' thoughts or behaviour similar to their own (Ames, 2004; Prentice, 1990).

However, does this mean that one should try to always establish a psychological distance or ignore one's feelings when making decisions? We want to make very clear that our suggestion is not that intuitions or feelings should to be disregarded in order to arrive at better decisions. Indeed, immediate concerns often serve an adaptive purpose (Damasio, 1994; Schnall, Haidt, Clore & Jordan, 2008; Schwarz & Clore, 2007). For example, consider a situation requiring negotiation between two parties. When one proposes an unfair contract, the other is likely to experience a negative emotional response but ignoring it and trying to be "rational" might be counterproductive. In order to achieve an optimal exchange, one should use the emotional response as a way of preventing loss in the long run. Similarly, when people face others' moral transgressions, they spontaneously experience negative affect (Cannon, Schnall, & White, 2011; Schnall et al., 2008), and these feelings can be important signals in deciding whether certain behaviors are acceptable or not. Therefore, psychological distance can provide a benefit when subjective and visceral reactions get in the way and mislead decisions, but at the same time, when feelings essential to understanding a situation, psychological distance might be detrimental.

Thus, there needs to be a delicate balance between when to pay attention to one's feelings, and when to focus on other requirements of a given situation. One crucial factor to consider is whether the given situation involves a continuous interaction or a single encounter. A continuous interaction requires a strategy that brings the most benefit in the end, which means that while attempting to arrive at the best strategy, one might have to sacrifice some resources in the short run. However, a one-shot engagement requires an objective strategy that calculates the greatest benefit when considering only that single encounter. The current research involved a one-shot decision for each trial during the Ultimatum Game. In fact, many decisions made on a daily basis resemble the current experimental situation. People make a judgement

Figure 1: Acceptance rates for the Ultimatum Game with three social distance conditions: Self, best friend, and stranger. Error bars indicate  $\pm$  standard errors of the mean.



guided by their immediate concerns for decisions that do not promise a second chance, and the wrong choice can become a source of regret. For instance, people often choose to eat a chocolate bar despite their diet plan, or spend money on buying clothes while disregarding the overdue credit card bill. In such contexts, our findings suggest that psychological distancing might prevent people from making regrettable choices.

The current findings are closely related to interpreting human decision making in terms of “hot” and “cold” processing (Loewenstein, 2000). It is often hard to disentangle these two processes in a decision making situation, but psychological distancing might provide a simple way of doing so. As observed in the current research, inducing distance helped people move away from “hot” emotional processing in order to facilitate “cold” cognitive processing. Our findings shed light on the possibility that differences in psychological distance might be responsible for discrepancies in decisions resulting from the hot and cold empathy gap. People differ in prediction when they are actually experiencing the “hot” state compared to the “cold” state. For instance, people who are hungry express greater interest in eating spaghetti for breakfast the following day than those who have just eaten (Gilbert, Gill, & Wilson, 2002). Similarly, after exercising, experiencing thirst leads participants to report that they are more bothered by this sensation than participants who are about to begin their exercise (Van Boven & Loewenstein, 2003). Such a disparity can be resolved when a given sit-

uation is construed at a distant social level, and therefore is removed from the current state. Similarly, construing at a close social level could benefit in correcting prediction errors when people are in a “cold” state.

Another relevant theoretical framework is Construal Level Theory (CLT) with its core construct of psychological distance (Trope & Liberman, 2003; 2010). According to the theory, psychological distance involves different mental representations of events, such that thinking about the distant past, distant future, and others’ minds involves high-level construals that are abstract, decontextualized and removed from direct experience, whereas thinking about the here and now involves low-level construals that are concrete and grounded in physical and perceptual experience. In relation to our finding, it might be that participants formed different cognitive construals that had led to distinct choices in the Ultimatum Game. One way to test this possibility is to apply other dimensions of psychological distance proposed by CLT. For example, based on the functional equivalence among various dimensions of psychological distance (Bar-Anan, Liberman, Trope & Algom, 2007; Fiedler, Jung, Wänke, Alexopoulos, 2012; Trope & Liberman, 2003; 2010; Pronin & Ross, 2006; Pronin, Olivola, & Kennedy, 2008), we predict that similar patterns in acceptance rates might occur irrespective of whether the psychological distance is social, temporal, or spatial. Supporting this prediction, recent findings have shown that, when making a judgement or decision, a temporally distant self such as a past or future self is

often treated like a socially distant other (Pronin & Ross, 2006; Pronin et al., 2008).

The current research points to new directions of investigating decision making. Whereas previous work on the Ultimatum Game mainly focused on whether changing participants' mood or the characteristics of the opponent could change responders' decisions (e.g., Harlé & Sanfey, 2007; Solnick & Schweitzer, 1999; van't Wout et al., 2006), we introduced a different way of influencing responders by manipulating their psychological distance. Other paradigms that investigate decision making might similarly benefit from such manipulations. For example, people might be more likely to delay gratification when making decisions for a distant person. Likewise, consumers might be able to optimize their choices within a limited budget if they pretended to use somebody else's budget and shopping list. Decisions tied to current emotional feelings might also benefit from psychological distancing. For instance, before reacting to an insult with an outburst of anger, one might instead try to imagine whether the response seems appropriate when considered from a third-person perspective. Thus, our research provides a first step in illuminating how decision processes occurring on a daily basis are shaped by considerations of psychological distance, and this might hold the key for overcoming various biases in judgments and decisions.

## References

- Ames, D. (2004). Strategies for social inference: A similarity contingency model of projection and stereotyping in attribute prevalence estimates. *Journal of Personality and Social Psychology, 87*, 340–353.
- Andrade, E. B., & Ariely, D. (2009). The enduring impact of transient emotions on decision making. *Organizational Behaviour and Human Decision Processes, 109*, 1–8.
- Bar-Anan, Y., Liberman, N., Trope, Y., & Algom, D. (2007). Automatic processing of psychological distance: Evidence from a Stroop task. *Journal of Experimental Psychology: General, 136*, 610–622.
- Buckner, R. L., & Carroll, D. C. (2007). Self-projection and the brain. *Trends in Cognitive Science, 11*, 49–57.
- Camerer, C. F., & Thaler, R. H. (1995). Anomalies: Ultimatums, dictators, and manners. *Journal of Economic Perspectives, 9*, 209–219.
- Cannon, P. R., Schnall, S., & White, M. (2011). Transgressions and expressions: Affective facial muscle activity predicts moral judgments. *Social Psychological and Personality Science, 2*, 325–331.
- Chapman, H. A., Kim, D. A., Susskind, J. M., & Anderson, A. K. (2009). In bad taste: Evidence for the oral origins of moral disgust. *Science, 323*, 1222–1226.
- Damasio, A. (1994). *Descartes' error: Emotion, reason, and the human brain*. New York: Putnam.
- Dunn, B. D., Evans, D., Makarova, D., White, J., & Clark, L. (2012). Gut feelings and the reaction to perceived inequity: The interplay between bodily responses, regulation, and perception shapes the rejection of unfair offers on the ultimatum game. *Cognitive, Affective, & Behavioral Neuroscience, 12*, 419–429.
- Fiedler, K., Jung, J., Wänke, M., & Alexopoulos, T. (2012). On the relations between distinct aspects of psychological distance: An ecological basis of construal-level theory. *Journal of Experimental Social Psychology, 48*, 1014–1021.
- Freitas, A. L., Langsam, K. L., Clark, S., & Moeller, S. J. (2008). Seeing oneself in one's choices: Construal level and self-pertinence of electoral and consumer decisions. *Journal of Experimental Social Psychology, 44*, 1174–1179.
- Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology, 90*, 351–367.
- Gilbert, D. T., Gill, M. J., & Wilson, T. D. (2002). The future is now: temporal correction in affective forecasting. *Organizational Behavior and Human Decision Processes, 88*, 430–444.
- Güth, W., Schmittberger, R., & Schwarze, B. (1982). An experimental analysis of ultimatum bargaining. *Journal of Economic Behavior & Organization, 3*, 367–388.
- Harlé, K. M., & Sanfey, A. G. (2007). Incidental sadness biases social economic decisions in the Ultimatum Game. *Emotion, 7*, 876–881.
- Hoffman, E., McCabe, K., & Smith, V. L. (1996). Social distance and other regarding behavior in dictator games. *American Economic Review, 86*, 653–660.
- Jones, B., & Rachlin, H. (2006). Social discounting. *Psychological Science, 17*, 283–286.
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes, 65*, 272–292.
- Loewenstein, G. (2000). Emotions in economic theory and economic behavior. *American Economic Review, 90*, 426–432.
- Metcalf, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review, 106*, 3–19.
- Mitchell, J. P., Banaji, M. R., & Macrae, C. N. (2005). The link between social cognition and self-referential thought in the medial prefrontal cortex. *Journal of Cognitive Neuroscience, 17*, 1306–1315.
- Nan, X. (2007). Social distance, framing, and judgment: A construal level perspective. *Human Communication Research, 33*, 489–514.

- Pillutla, M. M., & Murnighan, J. K. (1996). Unfairness, anger, and spite: Emotional rejections of ultimatum offers. *Organizational Behavior and Human Decision Processes*, *68*, 208-224.
- Prentice, D. A. (1990). Familiarity and differences in self- and other- representations. *Journal of Personality and Social Psychology*, *59*, 369-383.
- Pronin, E., Olivola, C. Y., & Kennedy, K. A. (2008). Doing unto future selves as you would do unto others: Psychological distance and decision making. *Personality and Social Psychology Bulletin*, *34*, 224-236.
- Pronin, E., & Ross, L. (2006). Temporal differences in trait self-ascription: When the self is seen as an other. *Journal of Personality and Social Psychology*, *90*, 197-209.
- Sanfey, A. G., Rilling, J. K., Aronson, J. A., Nystrom, L. E., & Cohen, J. D. (2003). The neural basis of economic decision-making in the Ultimatum Game. *Science*, *300*, 1755-1758.
- Sanfey A. G., Loewenstein G., McClure S. M., & Cohen J. D. (2006). Neuroeconomics: Cross-currents in research on decision-making. *Trends in Cognitive Science*, *10*, 108-116.
- Schacter D. L., Addis D. R. (2007). The cognitive neuroscience of constructive memory: Remembering the past and imagining the future. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *362*, 773-786.
- Schnall, S., Haidt, J., Clore, G. L., & Jordan, A. (2008). Disgust as embodied moral judgment. *Personality and Social Psychology Bulletin*, *34*, 1096-1109.
- Schwarz, N., & Clore, G. L. (2007). Feelings and phenomenal experiences. In A. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (2nd ed., pp. 385-407). New York: Guilford.
- Solnick, S. J., & Schweitzer, M. (1999). The influence of physical attractiveness and gender on ultimatum game decisions. *Organizational Behavior and Human Decision Processes*, *79*, 199-215.
- Spreng, R. N., Mar, R. A., & Kim, A. S. (2009). The common neural basis of autobiographical memory, prospection, navigation, theory of mind and the default mode: A quantitative meta-analysis. *Journal of Cognitive Neuroscience*, *21*, 489-510.
- Thaler, R. H. (1988). Anomalies: The Ultimatum Game. *Journal of Economic Perspectives*, *2*, 195-206.
- Trope, Y., & Liberman, N. (2000). Temporal construal and time-dependent changes in preference. *Journal of Personality and Social Psychology*, *79*, 876-889.
- Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, *110*, 403-420.
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, *117*, 440-463.
- Van Boven, L., Kane, J., McGraw, A. P., & Dale, J. (2010). Feeling close: Emotional intensity reduces perceived psychological distance. *Journal of Personality and Social Psychology*, *98*, 872-885.
- Van Boven, L., & Loewenstein, G. (2003). Social projection of transient drive states. *Personality and Social Psychology Bulletin*, *29*, 1159-1168.
- van't Wout, M., Kahn, R. S., Sanfey, A. G., & Aleman, A. (2006). Affective state and decision-making in the ultimatum game. *Experimental Brain Research*, *169*, 564-568.
- Watkins, E., Moberly, N. J., & Moulds, M. L. (2008). Processing mode causally influences emotional reactivity: Distinct effects of abstract versus concrete construal on emotional response. *Emotion*, *8*, 364-378.