

From “me” to “we”: The role of construal level in promoting maximized joint outcomes

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ABSTRACT

To minimize waste and inefficiencies, research has sought to understand under what circumstances decision-makers tasked with allocating outcomes to self and others maximize joint outcomes – making decisions that provide the greatest net gain across all vested stakeholders, irrespective of beneficiary. We explore construal level as a critical cognitive mechanism. We hypothesize that high-level construal – a representational process that expands mental scope by broadening attention to global, gestalt wholes – relative to low-level construal – a representational process that contracts mental scope by narrowing attention to local, idiosyncratic elements – should facilitate sensitivity to the welfare of the collective unit relative to specific individuals. Four experiments demonstrate that high-level relative to low-level construal promotes decisions that maximize joint outcomes, irrespective of beneficiary. These findings contribute to a growing literature examining factors that influence consideration of joint outcomes by highlighting construal level as a key cognitive antecedent, with theoretical and practical implications.

1. Introduction

How people distribute outcomes (costs and rewards) to various individuals and groups is an essential question for understanding human interaction. In the domain of interpersonal relationships, for example, how dyadic partners exchange social resources, such as instrumental and social support, plays a key role in the success of those relationships (e.g., Clark & Mills, 1979; Rusbult & Van Lange, 2003). How individuals allocate rewards between themselves and larger collectives is the central question in the study of mixed-motive social dilemmas (e.g., Dawes, 1980; Hardin, 1968; Komorita & Parks, 1995; Messick & Brewer, 1983; van Lange, Joireman, Parks, & van Dijk, 2013). The distribution of outcomes is also the genesis for much intergroup cooperation versus conflict (e.g., Sherif, Harvey, White, Hood, & Sherif, 1961; Kelley & Stahelski, 1970), and forms the core of research on social justice – what is considered “fair” (e.g., Brockner & Wiesenfeld, 1996; Deutsch, 1985; Thibaut & Kelley, 1959; Tyler, 1994). Social life requires people to coordinate how best to allocate outcomes to individuals and groups – a decision-making process that is fraught with difficulties and challenges. To gain greater insight into this issue, it is important to study how this decision-making process unfolds and what factors facilitate more optimal distributions.

2. Maximizing joint outcomes

In this paper, we examine distribution decisions that involve maximizing joint outcomes. Maximized joint outcomes are economically efficient – they provide the greatest net value summed across all stakeholders, irrespective of beneficiary (i.e., Kaldor-Hicks efficiency; e.g., Coleman, 1979; Hicks, 1939; Kaldor, 1939). Decisions that maximize joint outcomes are viewed as prescriptively normative, as they extract the most one can gain from a given situation while reducing lost opportunities and waste. As an example, imagine that decision-makers must allocate \$10 between themselves and a partner. Imagine further that every dollar that decision-makers give to their partner is multiplied by 2. In this situation, maximizing joint outcomes would require decision-makers to give all \$10 to their partner (for a total net value across beneficiaries of \$20) rather than to keep all of the money for themselves (for a total net value of \$10) or to divide the money evenly (for a total net value of \$15). As the total value of the rewards distributed is highest when the partner receives all of the money, decision-makers who choose this option have maximized joint outcomes.

At times, maximizing joint outcomes may alternatively entail making decisions that at first glance appear to be self-interested (Tu et al., 2016; see also Choshen-Hillel, Shaw, & Caruso, 2015). Imagine a

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scenario in which decision-makers must allocate \$10 between themselves and a partner, but now every dollar that the decision-maker keeps for themselves is multiplied by 2. In this situation, maximizing joint outcomes would require decision-makers keep all \$10 (for a total net value across beneficiaries of \$20) rather than give all of the money to their partner (for a total net value of \$10). The key point here is that maximizing joint outcomes requires ignoring the beneficiaries of the outcomes, and instead focusing on the total overall value all can gain from a given decision.

Maximizing joint outcomes presents a challenge to decision-makers when they themselves are among the interested parties. Motivationally, people are self-interested and seek to maximize positive outcomes for themselves, making it difficult to prioritize others' interests over their own (e.g., *Hobbes, 1651; Miller, 1999; Schwartz, 1996*). This tendency to prioritize the self over others is only enhanced by people's expectation that others will also act in a self-interested manner (e.g., *Kelley & Stahelski, 1970; Miller, 1999*). Further, maximizing joint outcomes may also require appreciating others' needs and interests, a task that requires perspective-taking. Research suggests that perspective taking is a psychological process prone to error (*Epley, Keysar, Van Boven, & Gilovich, 2004; Flavell, 1986; Piaget, 1959*). For example, studies have shown that when engaging in perspective-taking, people start with their own perspective and attempt to adjust for differences between themselves and the target other. Unfortunately, such adjustments are often insufficient, leading to systematic bias (e.g., *Epley et al., 2004*). Taken as a whole, then, while it is easy for people to think about what would be good for them, it is difficult to situate these concerns in the context of others' needs and wants.

Accordingly, a common theme in the literature is that vested decision-makers must broaden their perspectives to move beyond their own narrow self-interests ("me") to consider what vested parties as a collective unit ("we") might stand to gain or lose in a given decision context. Empirical work in mixed-motive social dilemmas – situations that pit a decision-maker's self-interests against the interests of the broader collective to which they belong – reveals that decision-makers' reward allocations are more sensitive to the interests of others (relative to self-interest) when some shared superordinate social category between the decision-maker and other relevant parties is made more salient (e.g., *Brewer & Kramer, 1986; De Cremer & Van Vugt, 1999; Kramer & Brewer, 1984; Thompson, Kray, & Lind, 1998; Wit & Kerr, 2002*). Similar consequences of shifting from "me" to "we" are documented in research on dyadic relationships. Many relationships are based on exchange dynamics – the self-interested reciprocal exchange of benefits between partners. As relationships evolve and partners gain trust, however, they become increasingly characterized by communal dynamics – a focus on meeting the needs of the dyad relative to their own needs (e.g., *Crocker & Canevello, 2008; Clark & Mills, 1979*).

Importantly, this tendency to maximize joint outcomes as one's perspective broadens appears to be motivated by a desire to maximize joint outcomes across all parties, not simply to be more generous or altruistic. *Tu et al. (2016)*, for example, had participants allocate outcomes with a close versus casual friend, with the rationale that relationships with close friends were more likely to be viewed in collective terms ("we" rather than "me"). When allocating outcomes with a close relative to casual friend, participants were more altruistic when altruistic allocations maximized joint totals, and more selfish when self-interested allocations maximized joint totals. Thus, seeing self and others as a collective unit does not necessarily promote greater altruism. It can actually promote apparent selfishness to the extent that selfishness maximizes joint outcomes. This suggests that the broadening of perspective from "me" to "we" reduces an emphasis on who gets what, and instead promotes relatively greater attention to what "we" get.

3. Construal level theory

In this work, we build upon and extend past work by examining more directly the psychological mechanisms that promote the maximization of joint outcomes. That is, holding constant structural factors

such as relationship closeness, we ask: what psychological processes enhance people's consideration of joint rather than individual outcomes? Inspired by construal level theory (CLT; *Liberman & Trope, 2008; Trope & Liberman, 2010*), we propose that decision-makers' construal level plays a key role in how they weight global (e.g., what we get) relative to more local (e.g., what I get) information when making outcome allocation decisions.

How people represent or construe objects and events determines what features they selectively attend to, with important implications for evaluation, judgment, and decision-making (e.g., *Bruner, 1957; Griffin & Ross, 1991; Hastorf & Cantril, 1954*). For example, whereas construing a dog as a "pet" highlights those features that it has in common with other domestic animals, such as companionship and love, construing the same dog as a "Dalmatian" highlights those idiosyncratic features that distinguish it from other dogs, such as its spots and fire-house associations. CLT proposes that psychological distance – the removal of events from direct experience in terms of time (when), space (where), social distance (who), or hypotheticality (whether) – influences how people represent events. Detailed specifics about psychologically distant versus near events (such as those to occur next year vs. next week) are often unavailable or unreliable. In such circumstances, people focus on the global, essential features of events (i.e., high-level construal). This is functional because whereas secondary and local features are variable and context-specific, global essentials are constant across all possible manifestations of an event. With increasing proximity, on the other hand, people incorporate the increasingly available and reliable details to construct more idiosyncratic event representations (i.e., low-level construal). This allows them to tailor their responses to the unique demands of the more immediate circumstances. Thus, whereas focusing on global and essential information expands people's mental scope to facilitate consideration of more remote content, focusing on local and idiosyncratic information contracts their mental scope to facilitate immersion into the specifics of the here-and-now (e.g., *Trope & Liberman, 2010*; see also *Ledgerwood, Trope, & Liberman, 2010*).

Extensive research supports CLT's assertion that people recruit high-level as opposed to low-level construal in response to psychologically distant versus near events (for reviews, see *Liberman & Trope, 2008; 2014; Trope & Liberman, 2010*). For instance, people group objects into fewer yet broader categories when those objects are associated with psychologically distant rather than near events (*Liberman, Sagristano, & Trope, 2002; Wakslak, Trope, Liberman, & Alony, 2006*). When presented with compound Navon letters (larger letters composed of smaller letters, such as a large T made up of smaller L's; *Navon, 1977*), those who had imagined a psychologically distant rather than near event in a previous task were faster to identify the larger, global letters relative to the smaller, local constituent letters (*Liberman & Förster, 2009*). Psychological distance also leads those considering a series of data points to attend increasingly to the overall patterns rather than more specific observations (e.g., *Burgoon, Henderson, & Wakslak, 2013; Henderson, Fujita, Trope, & Liberman, 2006; Ledgerwood, Wakslak, & Wang, 2010*). These and many similar findings support the notion that psychological distance prompts people to engage in high-level construal, whereas psychological proximity prompts them to engage in low-level construal.

4. Construal level and the distribution of outcomes

Here, we apply CLT to understand when vested decision-makers are more likely to maximize joint outcomes in allocation decisions. We propose that the focus on global, gestalt wholes engendered by high-level construal, rather than on more local, specific elements engendered by low-level construal, should expand the scope of decision-makers' deliberations beyond their own individual outcomes, leading them to become relatively more sensitive to the outcomes of the broader collective unit. Thus, high-level as compared to low-level construal should

increasingly lead decision-makers to focus on what “we” get relative to “who gets what.” This in turn should sensitize them to what the collective, as a whole, stands to gain or lose by their decisions and increase the likelihood of them making allocation decisions that maximize joint outcomes.

Although the present approach mirrors prior research (e.g., Choshen-Hillel, et al., 2015; Coleman, 1979; Hicks, 1939; Kaldor, 1939; Tu et al., 2016) in its focus on the theme of broadening decision-makers’ perspectives to facilitate greater consideration of joint outcomes, it is important to note that our endeavor is not simply a re-iteration of past work. The CLT approach that we advance here allows us to propose novel hypotheses thus far untested by the literature. First, we uniquely predict that manipulations that induce high-level relative to low-level construal, even those unrelated to the immediate decision at-hand, should promote the maximization of joint outcomes. Second, we seek to illuminate new phenomena, such as the role of temporal distance in these decisions. For instance, CLT suggests that the timing of outcomes should systematically influence whether decision-makers choose to maximize joint outcomes or not, a specific hypothesis that we test here. In these ways, we hope to provide greater clarity as to the precise psychological mechanisms that promote maximization of joint outcomes.

There is, nevertheless, preliminary support for our theoretical approach. A central goal of research on interpersonal negotiations, for example, is to understand factors that promote integrative agreements – those that provide win–win outcomes that maximize joint outcomes among negotiating parties. Integrative agreements require negotiators to concede on lower priority issues in exchange for concessions on higher priority issues – a process referred to as “log-rolling.” Such trade-offs, in turn, help generate greater joint values for vested parties than the parties would have achieved otherwise. Research applying CLT to negotiations suggests that psychological distance vs. proximity promotes log-rolling, thereby enhancing integrative agreements (Henderson et al., 2006; Okhuysen, Galinsky, & Uptigrove, 2003), and that this process is mediated by changes in construal level (Henderson & Trope, 2009). Research on mixed-motive social dilemmas similarly suggests that psychological distance reduces self-interest and promotes outcomes that benefit the larger collective to which the individual belongs, particularly among those who have a prosocial rather than a more self-interested social value orientation (De Dreu, Giacomantonio, Shalvi, and Sligte; 2009; Giacomantonio, De Dreu, Shalvi, Sligte, & Leder, 2010; Kortenkamp and Moore, 2006). Collectively, this work can thus be interpreted as suggesting that the broader, more expansive perspective that high-level relative to low-level construal engenders can increase the likelihood that decision-makers will maximize joint outcomes.

However, note that the payoff structures in this previous work occlude whether decisions were motivated by self-interest, altruism, or the desire to maximize joint totals. In integrative negotiations, for example, advancing one’s own interests requires one to also advance the interests of the other. As such, self-interest, pro-social altruism, and maximizing joint outcomes all prompt the same behavior. And in the mixed-motive social dilemmas research, maximizing joint outcomes requires advancing the interests of others, making it unclear whether such findings reveal behavior aimed at maximizing joint totals or simply pro-social altruism. What effect construal level has on maximizing joint outcomes is thus unclear from the current state of the literature. In the present research, we attempt to help clarify this issue by conducting a direct test of the hypothesis that high-level relative to low-level construal specifically promotes the maximization of joint outcomes.

Before detailing our empirical approach to and findings of this inquiry, it is worth highlighting one potential concern that could arise in response to our general argument. Namely, some might wonder whether recent research by Tu et al. (2016), described earlier, is inconsistent with our theoretical framework. In that work, the researchers

found that relationship closeness promoted a tendency for people to act selfishly when self-interested options maximized joint outcomes. One might suggest that relationship closeness is akin to psychological proximity, which in turn should evoke low-level construal. This interpretation would suggest that, contrary to our hypotheses, low-level rather than high-level construal should promote maximized joint outcomes. However, we would submit that relationship closeness is in fact associated with many variables beyond psychological proximity, including heightened partner liking and anticipated future interactions. In the present research, we manipulate construal level independently of these factors, thus providing greater clarity on the specific mechanism that underlies the effect that Tu et al. (2016) document.

5. The present research

We conducted four experiments to test our hypotheses. In Experiment 1, we experimentally induced differences in construal level by priming high-level versus low-level construal as procedural mindsets. We then examined the impact of this manipulation on allocation decisions in a novel mixed-motive economic game. The game was structured to reveal whether decisions as a function of construal level were made on the basis of self-interest, pro-social altruism, or maximization of joint outcomes. In Experiment 2, we sought to test an important implication of examining allocation decisions from a CLT perspective. To the extent that construal level impacts the allocation of outcomes, we should expect to find that psychologically distancing the decision should systematically influence allocation preferences. Thus, in Experiment 2, we manipulated whether outcomes would be allocated in the near versus distant future. Experiment 3 incentivized allocation decisions to test whether effects uncovered in Experiments 1 and 2 would extend to decisions with real consequences. Moreover, we sought to test an important boundary condition: the extent to which others represent a motivationally relevant group. No cognitive broadening of perspective will promote joint outcomes if the group that comprises the “joint” is not a meaningful whole. Thus, Experiment 3 examines the hypothesis that any impact of construal level on the maximization of joint outcomes is contingent on viewing the broader collective as motivationally relevant.

In Experiments 1–3, we predicted that high-level relative to low-level construal would enhance the likelihood that people maximize joint outcomes, irrespective of the beneficiary of those decisions. Experiment 4 sought to provide more direct evidence for our proposed mechanism – greater sensitivity to joint relative to individual outcomes – using an information search paradigm. In this final experiment, we predicted that high-level relative to low-level construal would promote heightened information-seeking about joint outcomes relative to outcomes to self and/or other.

6. Experiment 1

6.1. Method

6.1.1. Participants

One hundred and six undergraduate students at a large Midwestern University participated for partial completion of course requirements. Sample size was determined by recruiting as many participants as possible within a four-week window, with a minimum requirement of 25 participants per cell.

6.1.2. Construal level manipulation

Participants first completed the Why/How task, a procedure that reliably induces the tendency to engage in high-level versus low-level construal of subsequent unrelated events, respectively (Freitas, Gollwitzer, & Trope, 2004). This task presents participants with a target behavior (e.g., “improve and maintain health”) and asks them to generate superordinate ends achieved by the behavior (“live longer”) versus subordinate means by which to achieve the behavior

Table 1

Schematic of the two versions of the economic game used in Experiments 1–3. The amount to others is always how much each of the 4 others that comprise the group would receive. Participants always made decisions in the same order, starting at Decision 1 and ending with Decision 9.

Decision	Help-Others Condition		Self-Interest Condition	
	Option A	Option B	Option A	Option B
1	\$0 for self & \$100 for others	\$1 for self & \$90 for others	\$100 for self & \$0 for others	\$90 for self & \$1 for others
2	\$0 for self & \$100 for others	\$2 for self & \$80 for others	\$100 for self & \$0 for others	\$80 for self & \$2 for others
3	\$0 for self & \$100 for others	\$3 for self & \$70 for others	\$100 for self & \$0 for others	\$70 for self & \$3 for others
4	\$0 for self & \$100 for others	\$4 for self & \$60 for others	\$100 for self & \$0 for others	\$60 for self & \$4 for others
5	\$0 for self & \$100 for others	\$5 for self & \$50 for others	\$100 for self & \$0 for others	\$50 for self & \$5 for others
6	\$0 for self & \$100 for others	\$6 for self & \$40 for others	\$100 for self & \$0 for others	\$40 for self & \$6 for others
7	\$0 for self & \$100 for others	\$7 for self & \$30 for others	\$100 for self & \$0 for others	\$30 for self & \$7 for others
8	\$0 for self & \$100 for others	\$8 for self & \$20 for others	\$100 for self & \$0 for others	\$20 for self & \$8 for others
9	\$0 for self & \$100 for others	\$9 for self & \$10 for others	\$100 for self & \$0 for others	\$10 for self & \$9 for others

(“exercise”). To ensure that participants understood the prompts and to strengthen our manipulation, all participants responded to two behavior prompts: “improve and maintain recycling levels” and “improve and maintain health” (Fujita & Sasota, 2011).

6.1.3. Economic game

Participants then completed a novel mixed-motive economic game that pitted self-interest against the interests of others. Critically, we manipulated between-subjects which party (self vs. other) benefited from maximized joint outcomes. Participants made decisions about payoffs for themselves and four others. They were asked to imagine that the four others would not know who made the decisions nor how much each group member earned. Any money earned could not be shared, and they would never meet nor interact with the others. We predicted that high-level relative to low-level construal would lead participants to maximize joint outcomes, regardless of which party benefitted.

We assessed participants’ preferences using choice titration protocols (e.g., Hardisty, Thompson, Krantz, & Weber, 2013; Holt & Laury, 2002). Participants made a series of nine binary decisions. In the “help-others” version of the game, joint outcomes favored helping others. Option A remained constant across all nine decisions, allocating \$0 to self and \$100 (each) to the four others. Option B provided alternative payoffs that were determined using a 1:10 ratio, such that every \$1 decision-makers received cost the others \$10 (each). For example, in the first decision Option B offered participants \$1 and the others \$90. For each subsequent decision, the amount Option B offered to participants increased by \$1 and decreased the amount offered to others by \$10. The final decision participants made pitted \$0 to self and \$100 to others versus \$9 to self and only \$10 to others (see Table 1). By contrast, in the “self-interest” version of the game, maximizing joint outcomes entailed electing the option that helped one’s self. Specifically, Option A allocated \$0 to others and \$100 to self. Option B, by contrast, offered alternative payoffs that increased the amount allocated to others by \$1 (each) at a cost of \$10 to the self (see Table 1). In both conditions, participants indicated which reward allocation they preferred for each decision.

6.2. Results and discussion

6.2.1. Decisions maximizing joint outcomes

We first analyzed the total number of decisions each participant made that maximized joint outcomes (i.e., the number of “help-others” versus “self-interest” decisions in the help-others and self-interest conditions, respectively).¹ As predicted, there was no significant interaction between construal level and game version ($p = .59$), but there was

¹ As our paradigm entails choice titration, an alternative analysis we might perform involves examining cross-over points – the decision pairing in which participants switch from consistently preferring one option to the other. We conducted this alternative analysis for each of our first three experiments and report the results of these analyses in the online supplemental materials.

a significant main effect such that high-level construal ($M = 5.64$, $SE = .44$) led to more decisions consistent with joint outcome maximization than low-level construal ($M = 3.54$, $SE = .49$), $F(1,102) = 10.66$, $p = .001$ (see Fig. 1). When testing this effect separately for each version of the game, high-level construal (help-others condition: $M = 5.64$, $SE = .64$; self-interest condition: $M = 5.63$, $SE = .60$) increased the number of decisions consistent with joint outcome maximization relative to low-level construal (help-others condition: $M = 3.79$, $SE = .68$, $t[54] = 1.98$, $p = .05$; self-interest condition: $M = 3.20$, $SE = .68$, $t[48] = 2.63$, $p = .01$). Irrespective of beneficiary, then, high-level (relative to low-level) construal promoted decisions that maximized joint outcomes.

6.2.2. Controlling for payoff differences across conditions

One potential drawback of the previous analytic strategy is that it does not account for the differences in payoffs across the two different game versions. In the help-others condition, the others in the game collectively lose \$40 for each \$1 the decision-maker receives; in the self-interest condition, the others collectively gain \$4 for each \$10 lost by the decision-maker. To account for these differences, we analyzed the data using mixed effects modeling, predicting each decision (maximized joint outcomes versus not) as a function of construal while statistically adjusting for the amount of money “left on the table” by the option that did not maximize joint outcomes.² Larger payoff differences (i.e., more money sacrificed by the inefficient option) made participants significantly less likely to elect the option that maximized joint outcomes, $b = -.007$, $SE = .001$, $Z = -4.50$, $p < .001$. Critically, however, even after controlling for these payoff differences, the results still revealed a significant effect of construal on choice, such that high-level construal promoted choices that maximize joint outcomes, $b = 1.20$, $SE = .39$, $Z = 3.11$, $p = .002$. Further, this effect remained consistent within each condition – help-others condition: $b = 1.30$, $SE = .62$, $Z = 2.08$, $p = .04$; self-interest condition: $b = 1.26$, $SE = .48$, $Z = 2.65$, $p = .008$. As such, it does not appear that payoff differences between the two conditions account for the effect of construal level on maximized joint outcomes.

Experiment 1 demonstrates that high-level relative to low-level construal promotes the maximization of joint outcomes, regardless of whether self or others benefit. One important implication of this is that individuals should be more likely to maximize joint outcomes for decisions that are psychologically distant rather than psychologically proximal, as shifts in psychological distance reliably shift level of construal (see Trope & Liberman, 2010, for a review). Allocation decisions, for example, may not always be enacted immediately, but may

² A second analytic strategy that normalizes payoff differences across the two versions of the game involves calculating the total net amount earned for all parties across all decisions, divided by the total amount possible. The results of such an analysis (which we performed for Experiments 1–3) lead to similar conclusions, and are discussed in the supplemental materials.

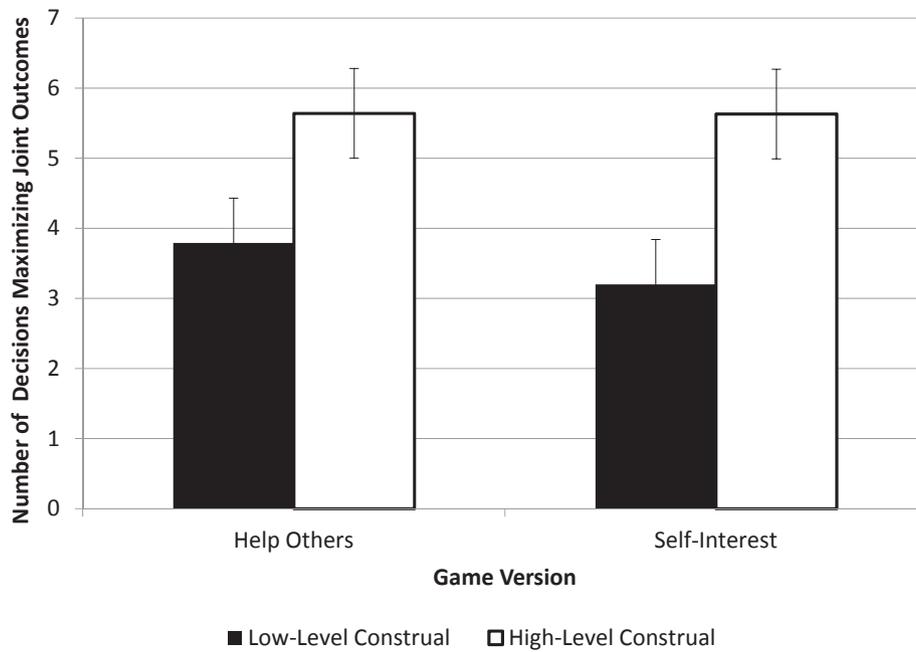


Fig. 1. Number of decisions that maximized joint outcomes made by participants as a function of construal level and economic game condition. Error bars represent $\pm 1 SE$.

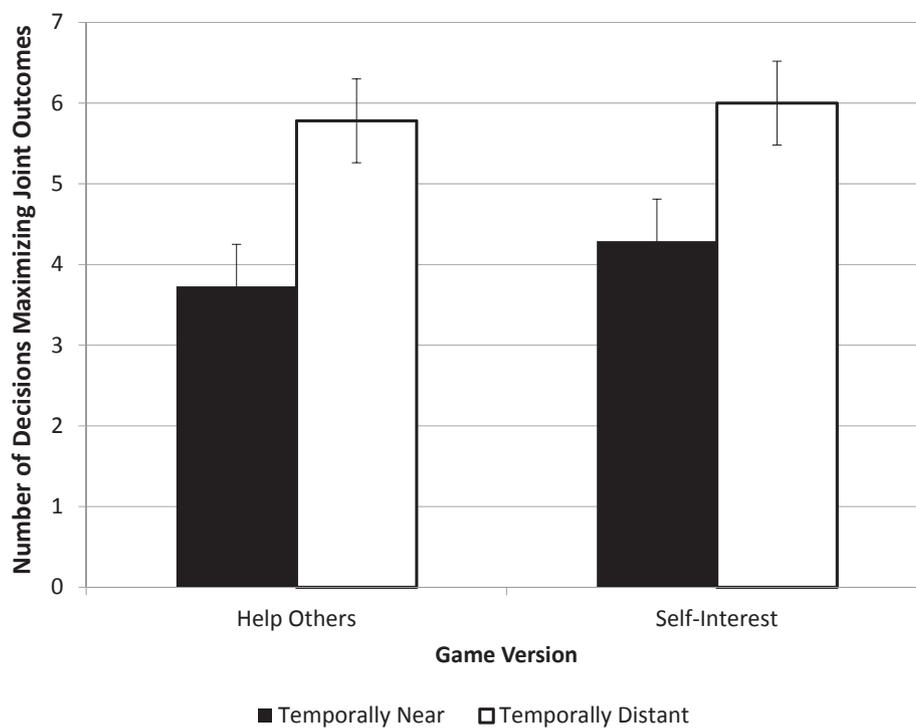


Fig. 2. Number of decisions that maximized joint outcomes made by participants as a function of temporal distance and economic game condition. Error bars represent $\pm 1 SE$.

rather take several weeks, months, or years to implement. CLT suggests that the increasing temporal distance associated with any enactment delay should promote high-level rather than low-level construal, and thus enhance sensitivity to joint outcomes. We test this implication in Experiment 2.

7. Experiment 2

7.1. Method

7.1.1. Participants

One hundred and sixty-three undergraduate students at a large Midwestern University participated for partial completion of course requirements. Sample size was determined by recruiting as many

participants as possible within a four-week window, with a minimum requirement of 25 participants per cell.

7.1.2. Materials and procedure

We manipulated temporal distance by asking participants to imagine that rewards earned while playing the game would be distributed either “tomorrow” (near future) or “a year from now” (distant future; Liberman, et al., 2002). To make these decisions more vivid, prior to playing the game, participants were instructed to write a few sentences about what their life would be like “tomorrow” versus “a year from now,” respectively (Förster, Friedman & Liberman, 2004). Participants then completed the same mixed-motive economic game as in Experiment 1.

7.2. Results and discussion

7.2.1. Decisions maximizing joint outcomes

As before, we first calculated the total number of decisions each participant made that maximized joint outcomes. Replicating Experiment 1, we found only a significant main effect of construal level, such that temporal distance ($M = 5.76$, $SE = .35$) led to more decisions that maximized joint outcomes than temporal proximity ($M = 4.18$, $SE = .39$), $F(1, 160) = 12.84$, $p < .001$ (see Fig. 2). The interaction between construal level and game condition was not significant ($p = .60$). When conducting individual t-tests, temporal distance (help-others condition: $M = 5.78$, $SE = .52$; self-interest condition: $M = 5.75$, $SE = .47$) increased the number of decisions consistent with maximizing joint outcomes relative to temporal proximity across both game versions (help-others condition: $M = 3.73$, $SE = .59$, $t[79] = 2.60$, $p = .01$; self-interest condition: $M = 4.29$, $SE = .52$, $t[81] = 2.47$, $p = .02$). Thus, increased temporal distance promoted maximizing joint outcomes, irrespective of whether others versus self were the beneficiary.

7.2.2. Controlling for payoff differences across conditions

As in Experiment 1, we next analyzed the data using mixed effects modeling to predict each individual decision as a function of construal while statistically adjusting for the total dollar amount sacrificed by the selection of the inefficient option. Once again, the results revealed that as the payoff differences increased, participants were less likely to choose the option that maximized joint outcomes, $b = -.009$, $SE = .001$, $Z = -6.67$, $p < .001$. Further, the results again revealed a significant effect of construal on choice, $b = .97$, $SE = .30$, $Z = 3.23$, $p = .001$, and that this effect remained consistent within each condition – help-others condition: $b = 1.42$, $SE = .54$, $Z = 2.65$, $p = .008$; self-interest condition: $b = .61$, $SE = .31$, $Z = 2.93$, $p = .05$. Thus, it does not appear that payoff differences between the two conditions accounts for the effect of construal level on maximized joint outcomes.

Experiments 1 and 2 demonstrate that high-level (relative to low-level) construal can promote maximizing joint outcomes in a mixed-motive social dilemma. We have argued that this occurs because high-level construal broadens decision-makers’ perspectives, leading to a greater focus on what the broader whole can attain from a given situation relative to the interests of specific individuals. In Experiment 3, we explore an important boundary condition to this effect: to what extent the collective unit is motivationally relevant. We propose that high-level relative to low-level construal promotes sensitivity to joint relative to individual outcomes. Any effect of construal level should therefore be evident only to the extent that the “joint whole” is motivationally meaningful. If there is no meaningful joint collective, there is little to motivate a decision-maker to prioritize collective over individual outcomes, irrespective of any cognitive broadening of perspective. Thus, any impact of construal level on the maximization of joint outcomes should be contingent on perceiving self and others as a meaningful joint unit. Experiment 3 tested this prediction by

measuring the degree to which participants felt solidarity with the others in the economic game.

A second objective of Experiment 3 was to extend the results of Experiments 1 and 2 from hypothetical scenarios to decisions of actual consequence. To do so, we incentivized the procedures used in Experiments 1 and 2. Although considerable prior literature suggests that participants behave similarly when confronting hypothetical and real decisions (e.g. Camerer & Hogarth, 1999), using actual monetary rewards permits stronger conclusions about the behavioral consequences of the joint outcome dynamics we propose.

8. Experiment 3

8.1. Method

8.1.1. Participants

Three hundred and twenty-six undergraduate students at a large Midwestern University participated for partial completion of course requirements. As this experiment tested a 3-way interaction, we collected a larger sample than the previous experiments. Our “stop-rule” was to collect as much data as possible before the end of the semester (approximately two months). Three participants did not fill out our key measure of the motivational relevance of others and were hence excluded from all analyses.

8.1.2. Materials and procedure

We incentivized the economic game used in our first two experiments by informing participants that upon conclusion of data collection, one participant would be chosen at random as the “decider” and four others as the “group members.” These five participants would receive the actual monetary outcomes stipulated by one of the decider’s choices selected at random. As before, all participants were instructed that their decisions would be anonymous, and that they would not know with whom they were paired, or what options the decider was choosing between. Participants provided an email address at which they could be contacted if they were selected to receive the actual monetary outcomes of the game.

Participants then completed the why/how task described in Experiment 1 and played the game. We assessed to what degree others in this game were motivationally relevant via a post-task measure of felt solidarity with these other group members (i.e., a proxy measure). Specifically, participants used a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) to indicate their level of agreement with the statement, “I feel solidarity with the other people in my group.” We used solidarity as an indicator of motivational relevance because the concept of solidarity captures commitment to and investment in others in a group, as well as a psychological bond and inclination to coordinate with group members (Leach et al., 2008).

Participants were then debriefed and dismissed. Following conclusion of data collection, we randomly selected one participant to be the “decider” and four others to represent “group members.” We selected at random one of the decisions that the decider made during the game, and then paid the decider and group members their respective payoffs.

8.2. Results and discussion

8.2.1. Decisions maximizing joint outcomes

Initial analyses validated solidarity as a measure of motivational relevance. Specifically, we regressed the number of efficient decisions on game condition, solidarity, and their statistical interaction. A significant interaction, $b = .51$, $SE = .18$, $t(319) = 2.80$, $p = .005$, revealed that, as expected, higher solidarity increased the number of efficient decisions (those that benefitted the group) in the help-other conditions, and reduced the number of efficient decisions (those that

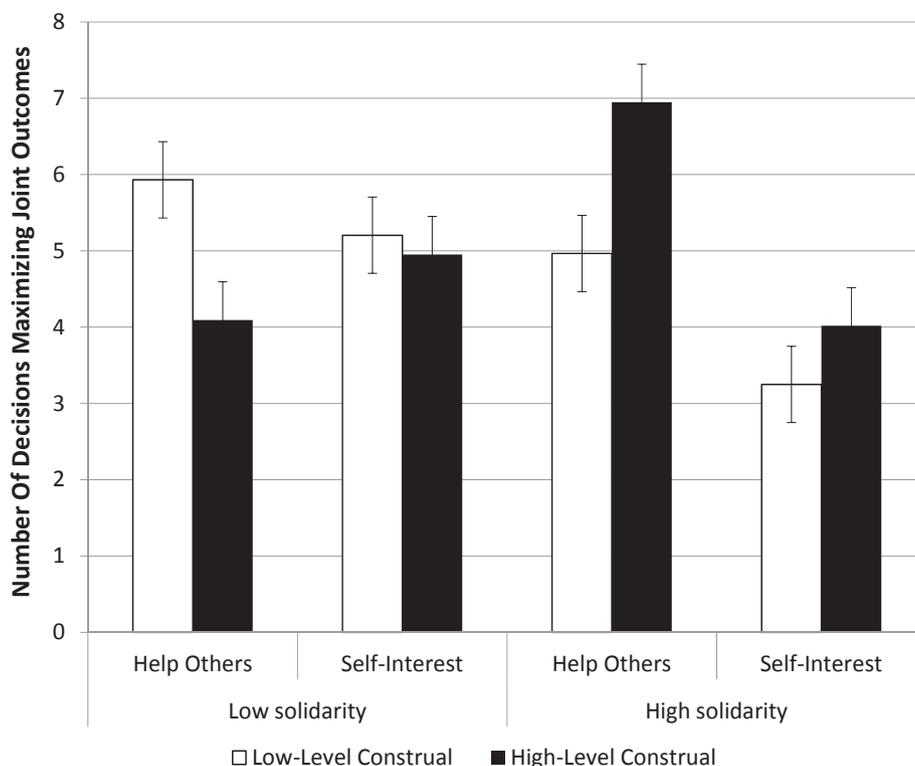


Fig. 3. Number of decisions that maximized joint outcomes made by participants as a function of construal level, economic game condition, and solidarity with the group (plotted at ± 1 SD) in Experiment 3. Error bars represent ± 1 SE.

benefit the self) in the self-interest condition. Further, other analyses revealed that solidarity was not influenced by our manipulation of construal ($b = -0.07, SE = 0.06, t(321) = -1.262, p = .21$).³

For our primary analysis, we then regressed the total number of decisions each participant made that maximized joint outcomes on construal level (effects coded: 1 = high and -1 = low), solidarity (z-scored), and game version (-1 = self-interest condition vs. 1 = help others condition). This analysis yielded a marginally significant 3-way interaction $b = .35, SE = .18, t(315) = 1.92, p = .06$.⁴ As expected, for those high in solidarity, there was only a main effect of construal, such that high-level relative to low-level construal promoted a greater number of decisions consistent with maximizing joint outcomes, $b = .21, SE = .08, t(315) = 2.67, p = .008$ (see Fig. 3). The interaction between construal and game version was not statistically significant at high solidarity ($p > .20$). These findings replicate Experiments 1 and 2: when others are seen as representing a motivationally relevant whole, participants' choices were more likely to maximize joint outcomes regardless of beneficiary.

We anticipated that any effect of construal level on sensitivity to joint outcomes might be more muted among participants who felt low

³ Given research that suggests that high-level relative to low-level construal promotes perceptions of interpersonal similarity (e.g., Levy, Freitas & Salovey, 2002) and group entitativity (Henderson, 2009), one might have predicted that construal level would impact ratings of group solidarity. Note, however, that similarity and entitativity represent cognitive variables, whereas solidarity refers to the motivational relevance of the group. A group may have high entitativity and appear highly similar to a decision-maker, yet not be motivationally meaningful. As a distinct motivational rather than cognitive variable, solidarity does not appear to be directly impacted by manipulations of construal level.

⁴ Experiments 1–2 might lead one to expect a significant main effect of construal, irrespective of solidarity. The fact that we incentivized decisions in Experiment 3, however, may account for this difference. Participants may have experienced more acute self-interest motivation and weakened solidarity when real money was at stake. Unfortunately, as we did not measure solidarity in Experiments 1–2, this conclusion remains tentative.

solidarity with their groups. Results largely conformed to this prediction: we did not find any main effects of construal level and game version among those with low solidarity. Somewhat unexpectedly, the interaction between these variables neared significance yet in the opposite direction: $b = -.12, SE = .08, t(315) = 1.53, p = .13$. Inspection of this interaction revealed that although there was no effect of construal level in the self-interest condition, $b = -.13, SE = .34, t(315) = .37, p = .71$, high-level relative to low-level construal prompted fewer decisions in line with joint outcomes in the other-interested condition, $b = -.92, SE = .38, t(315) = -2.39, p = .02$. To explain this pattern, we note that self-interest may represent an over-determined response in the self-interest condition. Concerns about joint outcomes and self-interest both suggest acting selfishly – producing what appears to be a floor effect for these individuals (see Fig. 3). By contrast, in the help-others version, the payoff structure may suggest normative expectations to advance the welfare of others. When engaged in low-level construal, decision-makers may feel pressured to appear generous, even when it undermines their own self-interest. By contrast, in keeping with other CLT findings (e.g., Eyal, Sagristano, Trope, & Liberman, 2009; Fujita, Trope, Liberman, & Levin-Sagi, 2006; Kivetz & Tyler, 2007; Giacomantonio et al., 2010; Torelli & Kaikati, 2009; Rogers & Bazerman, 2008; Tenbrunsel, Diekmann, Wade-Benzoni, & Bazerman, 2010), high-level construal may promote people's true values – thus leading the self-interested to advance self-interest over helping others in their decisions.

8.2.2. Controlling for payoff differences across conditions

Next, we conducted mixed effects modeling to account for payoff differences across the two conditions. Somewhat unexpectedly, the effect of payoff differences was the opposite of that in Experiments 1 and 2: participants were more likely to choose the option maximizing joint outcomes as more money was “left on the table” by the inefficient option, $b = .002, SE = .0007, Z = 2.81, p = .005$. Even after statistically adjusting for payoff differences, the results revealed a significant

Table 2
Number of participants who chose to learn about the massage duration for themselves, for the other, or the joint total, broken down by construal.

	Information – self	Information – other	Information – joint
Low-level construal	20	8	30
High-level construal	9	1	28

two-way interaction⁵ between construal and solidarity, $b = .39$, $SE = .12$, $Z = 3.28$, $p = .001$, such that high-level construal predicted the maximization of joint outcomes, particularly when solidarity was high, $b = .75$, $SE = .26$, $Z = 2.91$, $p = .004$ (vs. when it was low, $b = -.47$, $SE = .25$, $Z = -1.82$, $p = .07$). Thus, as in our previous two experiments, payoff differences between the two conditions do not appear to account for the effect of construal level on maximized joint outcomes.

9. Experiment 4

The first three experiments demonstrated that high-level construal promotes decisions consistent with maximizing joint outcomes, provided that the collective “joint” unit represents a motivationally relevant whole. One limitation of these experiments, however, is that they all used the same experimental paradigm. It is thus possible that our effects are dependent on the particulars of the (somewhat contrived) economic game. Experiment 4 sought to address these limitations by investigating joint outcome maximization in a new domain. Specifically, adapting materials from Tu et al. (2016), we investigated joint maximization in a dyadic context. Participants were presented with a choice of two massage packages that included massages for one’s self and a friend that varied in duration for each recipient, as well as in total duration across recipients. Experiment 4 further extended Experiments 1–3 by more directly assessing the claim that high-level as compared to low-level construal promotes consideration of joint outcomes relative to the outcomes of specific individuals. Using an information search paradigm, Experiment 4 examines what type of information (outcome information for self, others, or the joint unit) participants sought under high-level vs. low-level construal.

9.1. Method

9.1.1. Participants

Ninety-six participants from Amazon.com’s Mechanical Turk platform completed the experiment for \$.50. Our target sample size was 100; 4 participants did not complete the critical dependent variables.

9.1.2. Construal level induction

We manipulated construal level by manipulating temporal distance as in Experiment 2. Specifically, participants were asked to imagine being offered a choice between one of two free message packages that included messages for themselves and a friend, and told that they would receive these packages either “tomorrow” (low-level construal) or “a year from now” (high-level construal). As in Experiment 2, to make these decisions more vivid, participants first were instructed to write a few sentences about what their life would be like “tomorrow” or “a year from now,” respectively.

⁵ Unlike our previous analyses examining the number of efficient decisions, the three-way interaction with construal, game version, and solidarity in this analysis was not significant ($p = .14$). The results did, however, replicate the effect of construal at high levels of solidarity. Specifically, regardless of game version, high-level construal promoted electing the option that maximized joint outcomes, even after statistically controlling for payoff differences, $b = .81$, $SE = .25$, $Z = 3.32$, $p < .001$.

9.1.3. Massage packages

Following the construal level induction, we presented participants with the massage package materials, adapted from Tu et al. (2016). Participants were told that each massage package offered differing massage durations to them and their friend as well as across the two recipients. Specifically, participants were told:

“For each package, there are three pieces of information: (1) The duration of massage for you (in minutes); (2) the duration of massage for your friend (in minutes); and (3) the total duration of massage for you and your friend (i.e., the sum of duration for you and duration for your friend). However, you do not know any of the duration information. Before you choose between the packages, the person offering you the package will reveal one piece of information for each package: duration for self OR duration for friend OR total duration. In order to make your decision what piece of information would you want most?”

Participants then indicated whether they wanted to learn about the massage duration for themselves, the duration for their friend, or the total massage duration across both recipients.

9.2. Results

Following Tu et al. (2016), we recoded decisions as either choosing information about joint outcome maximization, or either of the two other options. As predicted, high-level construal promoted significantly greater interest in the joint outcome maximization decisions relative to either other option ($b = .48$, $SE = .23$, $Z(95) = 2.12$, $p = .03$). Full descriptions of participants’ choices are provided in Table 2. Beyond replicating the results of the first three experiments, these findings provide a more direct test of the assertion that high-level as compared to low-level construal increases participants’ sensitivity to joint outcomes (relative to the outcomes of specific individuals).

10. General discussion

In this paper, we have proposed that by promoting the cognitive means with which to broaden their perspective, engaging in high-level relative to low-level construal can lead decision-makers to maximize outcomes of the collective rather than those of specific individuals. Indeed, across four experiments, we found that high-level construal relative to low-level construal promoted decisions that maximized joint outcomes irrespective of beneficiary (Experiments 1–3), and enhanced preferences for information on joint relative to individual outcomes (Experiment 4). Importantly, this sensitivity to joint outcomes cannot be reduced to self-interest or pro-social altruism. In Experiments 1–3, when maximizing joint outcomes that favored the self, those engaged in high-level relative to low-level construal acted in an apparent selfish manner; yet, when maximizing joint outcomes that favored others, these same individuals acted in an apparently altruistic manner. Further, in Experiment 4, participants under high-level construal were more likely to seek out information about joint vs. individual outcomes. This nuanced pattern of results indicates that the broadened perspective of high-level construal promotes the maximization of joint outcomes specifically, not self-interest or altruism.

It is important to observe, however, that high-level (vs. low-level) construal is not a cure-all that promotes sensitivity to joint outcomes in all circumstances. Experiment 3 highlighted an important boundary condition: the broader collective that self and vested others form must be motivationally relevant. If the broader unit to which one belongs is not meaningful, it makes little sense to make decisions that take into account the outcomes of the collective, particularly when doing so entails sacrifice of one’s own self-interests. Indeed, in Experiment 3, although construal level influenced allocation decisions among those for whom the joint collective was motivationally relevant, it had considerably less influence among those who did not. As such, while

changing a decision-maker's level of construal can promote efforts to maximize joint outcomes, it only appears to do so among those for whom the broader collective is motivationally meaningful.

10.1. Implications

Taken together, these findings have several important implications. As noted at the outset, the present work builds on emerging research distinguishing the maximization of joint outcomes from self-interest and altruism (e.g., Van Lange, 1999; Tu et al., 2016). Echoing Tu et al. (2016), we not only demonstrate that collectively-minded decision-makers make choices that appear altruistic, but also, that they make choices that at first glance may appear to be blatantly self-interested. Findings like this highlight the importance of developing theoretical frameworks that incorporate distinctions between self-interest, altruism, and maximizing joint outcomes, as well as empirical methods that allow researchers to examine these constructs independently. In light of this, one contribution of the current work may be the introduction of our novel economic game (Experiments 1–3), which affords researchers the ability to assess these constructs using a behavioral choice paradigm. This economic game allows researchers to distinguish sensitivity to joint outcomes from self-interest and pro-social altruism. As we noted earlier, past research has tended to conflate maximizing joint outcomes with one or both of these alternative motivations. In the mixed-motive dilemmas literature, for example, researchers have historically tended to assume that people advance joint outcomes in an effort simply to advance their own interests and have “built-in” this assumption into behavioral choice paradigms – getting the best options for one's self often requires working to advance the interests of the collective (e.g., Dawes, 1980; Messick & Brewer, 1983; Komorita & Parks, 1995; Hardin, 1968; van Lange et al., 2013). Our economic game, however, goes beyond traditional methods by also allowing researchers to test whether people are willing to advance collective interests when such actions fail to benefit the self. Additionally, it allows them to explore how this same collective motivation may lead to what appears to be self-interested behavior. Thus, using paradigms like the one we have developed here may allow researchers to explore more fully what motivates people to advance the outcomes of the broader collective and reveal new phenomena.

In addition to replicating Tu et al.'s. (2016) findings conceptually, the present work also extends this research program in important ways. Namely, rather than highlighting individual-level (e.g., social value orientation) and group-level variables (e.g., relationship closeness), the present work examines a critical psychological process – construal level – that promotes the maximization of joint outcomes. Taken together, our findings suggest that CLT may serve as an integrative theoretical framework with which to understand and predict when decision-makers are more or less likely to allocate outcomes efficiently among parties (see also Brockner, Wiesenfeld, Siegel, Bobocel, & Liu, 2015; Rizvi & Bobocel, 2014). Experiment 2 in particular highlights one novel finding that can be derived from this framework; namely, that the timing of the outcome allocation may impact whether decision-makers seek to maximize joint outcomes. Thus, one reason why decision-makers may fail to consider joint outcomes may center on the temporal proximity of those decisions. Bearing this in mind, future work might examine other ways that the psychological distance of allocation decisions might influence consideration of joint outcomes. For example, perhaps decision-makers will be more concerned about joint outcomes when dealing with parties who are physically farther apart as compared to when they are nearer. Similarly, decision-makers might advance joint outcomes more when those outcomes are less rather than more likely.

Beyond psychological distance, the CLT literature provides an extensive list of other factors that influence construal level, and should thus similarly impact allocation decisions. For instance, research suggests that variables such as language (e.g., Fujita, Henderson, Eng,

Trope, & Liberman, 2006; Semin & Smith, 1999; Sneffella & Kuperman, 2015), word vs. picture presentation of stimuli (Rim, Amit, Fujita, Trope, Halbeisen, & Algom, 2015), ceiling height (Meyers-Levy & Zhu, 2007), elevation (Aggarwal & Zhao 2015; Slepian, Masicampo, & Ambady, 2015), black and white versus color imagery (Lee, Deng, Unnava, & Fujita, 2014), and visual perspective (Libby, Shaeffer, & Eibach, 2009; Shaeffer, Libby, & Eibach, 2015) can all influence construal level. Exploring these other factors may provide greater insight into whether, when, and why people maximize joint outcomes. At the same time, those looking to intervene might consider manipulating these variables to influence allocation decisions in which the psychological distance of the decisions cannot be systematically altered.

Finally, at least one additional implication worth exploring is the possibility that previous factors shown to promote maximization of joint outcomes, such as perceived relationship closeness (e.g., Tu et al., 2016), do so by changing decision-makers' construal level. In other words, rather than conceptualizing construal level as a variable that simply moderates whether decision-makers seek to maximize joint outcomes, it may be more insightful to think of construal level as a critical cognitive mediator that must be engaged to promote decisions that efficiently allocate resources to various parties. Thus, any attempt to influence allocation decisions may require attention to the construal level of the decision-maker. We encourage and look forward to future research exploring this and other possibilities noted above.

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Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.obhdp.2018.05.004>.

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