Imaginary Alternatives:

The Effects of Mental Simulation on Powerless Negotiators

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Abstract

This research demonstrates that people can act more powerfully without having power. Researchers and practitioners advise people to obtain alternatives in social exchange relationships to enhance their power. However, alternatives are not always readily available, often forcing people to interact without having much power. Building on research suggesting that subjective power and objective outcomes are disconnected and that mental simulation can improve aspirations, we show that the mental imagery of a strong alternative can provide some of the benefits that real alternatives provide. We tested this hypothesis in one context of social exchange - negotiations - and demonstrate that imagining strong alternatives (vs. not) causes powerless individuals to negotiate more ambitiously. Negotiators reached more profitable agreements when they had a stronger tendency to simulate alternatives (Study 1) or when they were instructed to simulate an alternative (Studies 3-6). Mediation analyses suggest that mental simulation enhanced performance because it boosted negotiators' aspirations and subsequent first offers (Studies 2-6), but only when the simulated alternative was attractive (Study 5). We used various negotiation contexts, which also allowed us to identify important boundary conditions of mental simulations in interdependent settings: mental simulation no longer helped when negotiators did not make the first offer, when their opponents simultaneously engaged in mental simulation (Study 6), and even backfired in settings where negotiators' positions were difficult to reconcile (Study 7). An internal meta-analysis of the file-drawer produces conservative effect size estimates and demonstrates the robustness of the effect. We contribute to social power, negotiations, and mental simulation research.

Keywords: negotiation, alternatives, power, powerless, aspiration, first offer, impasses, mental simulation, counterfactual thinking, interdependence

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Social conflict is pervasive. One of the most common ways to resolve conflict is through negotiation. Negotiation can be defined as a discussion aimed at resolving a perceived divergence of interests between two or more parties (Pruitt & Carnevale, 1993), which can include individuals, groups, organizations, or even countries. For example, individuals negotiate their job offers, groups divide a pool of resources, organizations negotiate mergers and acquisitions, and countries negotiate trade agreements or peace accords. Negotiating parties are usually interested in securing profitable agreements. To help negotiators achieve their goals, scholars and practitioners recommend to identify strong alternatives before the negotiation because alternatives provide the necessary power to ask for more (Fisher, Ury, & Patton, 2011; Thompson, 2011) and even negotiators themselves prefer having alternatives over no alternatives (Schaerer, Swaab, & Galinsky, 2015). The notion that having alternatives is beneficial is also supported by empirical evidence: Decades of negotiations research shows that negotiators with strong alternatives secure more profitable agreements than negotiators with weak or no alternatives (e.g., Malhotra & Bazerman, 2007; Pinkley, Neale, & Bennett, 1994; Schaerer et al., 2015; Thompson, 2011; Thompson, Wang, & Gunia, 2010).

Despite the benefits of strong alternatives, negotiators are not always able to obtain outside options. In fact, more often than not, negotiators have no alternative at all. For example, 60% of psychology students graduate college without any job offer (NACE, 2014) and many business school graduates need to negotiate jobs in the absence of an outside offer (GMAC, 2015; Grant, Nurmohamed, Ashford, & Dekas, 2011). This poses significant challenges for negotiators as the absence of alternatives lowers their aspirations (Wong, 2014), feelings of confidence (Schaerer et al., 2015), and willingness to negotiate (Magee, Galinsky, & Gruenfeld, 2007) – all of which are critical for achieving a profitable agreement. Unfortunately, little research has investigated how negotiators can overcome the lack of a strong alternative.

Examining this question would address an important theoretical gap in the social power literature, which has focused almost exclusively on the benefits of powerfulness at the expense of understanding whether and how the powerless can compete successfully (Schaerer, du Plessis, Yap, & Thau, 2016). An answer to this question would also be of practical importance because a lack of alternatives causes negotiators to settle on suboptimal outcomes (Pinkley et al., 1994; Thompson & Hrebec, 1996). For example, a job candidate who does not have an alternative offer (compared to a candidate who has an alternative) may be more likely to think that negotiating a job offer is inappropriate, even if doing so could leave both candidates and recruiters better off.

Negotiators who lack alternatives typically fail to secure profitable agreements because they do not set sufficiently high aspirations, preventing them from making ambitious offers (Galinsky, Ku, & Mussweiler, 2009; Zetik & Stuhlmacher, 2002). This implies that if negotiators without alternatives were able to set more ambitious aspirations, they could demand more from their opponent and overcome some of the disadvantages of being powerless. The present research investigates a mechanism that could motivate powerless negotiators to do so: *the mental simulation of having an attractive alternative*. We propose that the mental simulation of an attractive alternative causes negotiators to set higher aspirations when they lack an actual alternative which, in turn, motivate them to demand more from their opponent and improve their final agreements.

The current studies contribute to the literatures on social power, negotiations, and mental simulation in important ways. First, the majority of social power research has focused on the consequences of being *high* in power (Schaerer, du Plessis, et al., 2016), at the expense of understanding powerlessness. The current research advances the psychology of powerlessness by proposing a novel mechanism through which those in a seemingly disadvantaged position can perform more effectively in competitive social interactions. Second, past research has suggested

that strong alternatives not only serve as a safety net that prevents negotiators from accepting a bad deal but also serve as ambitious reference points that boost negotiators' aspirations. The present research finds that when alternatives are unavailable and aspirations are naturally low, mentally simulating alternatives may be a way for negotiators to reap at least some of the cognitive advantages that real alternatives typically offer. Third, the present research extends research on mental simulation (Epstude & Roese, 2008; Roese, 1994) by being one of the first to take the broader social context into account. We leverage the dynamic nature of bargaining and the diversity of negotiation contexts to identify several boundary conditions of mental simulation in a context where individuals' behaviors and outcomes are inherently interdependent. Finally, by employing real and incentivized negotiation paradigms (Studies 3-5) we also answer a call for increasing the external validity of experimental social power research (Schaerer, Lee, Galinsky, & Thau, 2018).

The Power of Alternatives

The negotiation literature suggests that the most important source of power is a negotiator's alternatives and that negotiators with no alternatives will find it hard, if not impossible, to achieve profitable agreements because powerlessness undermines their aspirations (for a review, see Galinsky, Schaerer, & Magee, 2017). Negotiation power is typically conceptualized as the quality of a negotiator's alternative, or BATNA (Best Alternative to a Negotiated Agreement, see Fisher et al., 2011). Negotiators with stronger alternatives set higher aspirations (Pinkley et al., 1994; Wong, 2014), demand more from their opponent (De Dreu, 1995), and behave more agentically to achieve their goals (Magee et al., 2007). In addition, negotiators with stronger alternatives use more threats (Lawler, 1992), take more risk (Anderson & Galinsky, 2006), claim larger shares of total payoffs (Komorita & Leung, 1985; Pinkley et al., 1994), and are influenced less by their counterparts' emotions (Van Kleef, De Dreu, Pietroni, &

Manstead, 2006). Thus, not having a strong alternative makes it challenging for negotiators to be ambitious and engage in behaviors that help them secure profitable agreements.

The idea that obtaining alternatives is a precondition to negotiating ambitiously and securing profitable agreements is rooted in the assumption that the functional value of alternatives primarily lies in the power they provide. For example, alternatives can help put pressure on the counterpart or signal one's worth in the marketplace (e.g., Kim, Pinkley, & Fragale, 2005; Pinkley, 1995; Pinkley et al., 1994). In contrast to this assumption, however, recent research has suggested that negotiation alternatives serve a dual role: they not only provide power but also act as salient anchors that influence negotiators' decision-making (Schaerer et al., 2015). This implies that the absence of structural power does not necessarily prevent one from setting high ambitions. Indeed, Schaerer and colleagues (2015) found that, despite feeling less powerful, negotiators without any alternative secured more profitable agreements than negotiators with a weak alternative. This occurred because weak alternatives served as low anchor values that weighed down both negotiators' aspirations and the value of their first offer. Thus, powerful negotiators do not always make aggressive first offers and powerless negotiators do not always open modestly.

Acting More Powerfully without Power

The research reviewed above suggests that negotiators may be able to take advantage of the disconnect between power and ambition and behave more ambitiously, even when they lack actual alternatives. Specifically, we propose that *mentally simulating* an attractive alternative (i.e., thinking about what it would be like to have a strong alternative) should cause negotiators to set higher aspirations, demand more from their opponent, and in turn help them achieve more advantageous outcomes. Our proposal that the mental image of an alternative causes people to set higher aspirations is based on mental simulation research (Kahneman & Miller, 1986; Roese,

1997). Mental simulation involves the construction of hypothetical possibilities, or counterfactuals, that highlight the usefulness of a particular action, which is then translated into a corresponding behavioral intention and goal-directed behavior (Epstude & Roese, 2008). For example, students who were asked to generate hypothetical thoughts about performing better on a recent exam subsequently reported greater intentions to engage in performance-facilitating behavior for future exams (Roese, 1994). Mental simulation can even affect task performance. In one study, participants who imagined performing well on an anagram task expected to be more successful and, as a result, also performed better in a subsequent anagram task (Sherman, Skov, Hervitz, & Stock, 1981). Thus, the imagery of a possibility is a precursor to expectancy and expectancy is a precursor to reality.

Mental simulations also play an important role in negotiations. For instance, negotiators who had their first offer immediately accepted (compared to those who had to negotiate) were less satisfied after the negotiation because they engaged in greater counterfactual thinking, mental simulations about "what might have been" had they made a different offer (Galinsky, Seiden, Kim, & Medvec, 2002). Likewise, negotiators who negotiated more (vs. fewer) issues felt worse about their outcome because their preoccupation with a larger number of issues generated more counterfactual thoughts about better possible outcomes (Naquin, 2003). Other research investigating the influence of mental simulation on negotiation outcomes has focused on learning from a negotiation that has already occurred and on the relative performance of different types of counterfactuals (Kray, Galinsky, & Markman, 2009; Wong, Haselhuhn, & Kray, 2012). For example, Kray and colleagues (2009) found that negotiators who generated additive counterfactuals about a past negotiation (e.g., 'If only I had made the first offer...') gained a competitive advantage over those who generated subtractive counterfactuals (e.g., 'If only I had not made the first offer...') because the former facilitated learning. Despite these insights, it

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remains unclear whether mental simulation a) affords negotiators a bargaining advantage, b) affects performance in an upcoming negotiation without having to rely on a salient experience from a recent negotiation, c) operates through routes other than learning, and d) under what conditions mental simulation is unlikely to be effective and potentially even backfires.

We propose that mental simulation can improve negotiators' performance by cognitively changing a negotiator's expectations. Specifically, the link from mental simulation to expectancy is driven by activating a script, or knowledge, that guides the pursuit of relevant goals (Epstude & Roese, 2008; Roese & Olson, 1993). For example, Smallman and Roese (2009) demonstrated that counterfactual judgments (compared to control judgments) reduced the reaction times to respond to content-specific prompts, suggesting that counterfactual judgments made such knowledge more readily accessible. Such activated knowledge, in turn, can cause people to anchor on a goal-relevant reference point and encourages them to pursue this goal more strongly (Chapman & Johnson, 1999). This process tends to be more effective for more attractive reference points (Epstude & Roese, 2008; Roese, 1994).

Based on these findings, we propose that negotiators who generate cognitions about what it would be like to have a strong alternative activate information (e.g., "*a strong alternative would allow me to negotiate more successfully*") will also set higher expectations (e.g., "*I should be more ambitious*"). In negotiations, such expectations are usually reflected in a negotiator's aspiration price – the best outcome that a negotiator can reasonably hope to achieve (Walton & McKersie, 1965). Thus, powerless negotiators who mentally simulate a strong alternative are likely to set higher aspirations than those who do not engage in mental simulation or those who simulate unattractive alternatives (Hypothesis 1).

Negotiators with higher aspirations, in turn, should make more ambitious first offers. Aspirations can have a strong influence on how individuals approach negotiations (e.g., White &

Neale, 1994). For example, negotiators who focus on their (high) aspirations tend to open the negotiation more assertively by making higher first offers compared to those who do not or those who focus on their (low) walkaway point instead (Galinsky & Mussweiler, 2001; Schaerer et al., 2015). Thus, we further predicted that negotiators who mentally simulate a strong alternative would make more ambitious first offers than those who do not engage in mental simulation (Hypothesis 2) *because* the former have higher aspirations (Hypothesis 3).

These predictions have important implications for the remainder of the negotiation. Past research has established strong correlations between the value of the first offer and the final negotiation outcome (see Loschelder, Trötschel, Swaab, Friese, & Galinsky, 2016 for a review) such that more ambitious first offers result in a larger piece of the bargaining pie (Galinsky et al., 2009). Although the first mover advantage emerges in both single and multi-issue negotiations (Gunia, Swaab, Sivanathan, & Galinsky, 2013), it is driven by how much negotiators demand from the distributive issues (i.e., issues for which the parties hold opposing interests and that are of similar importance to each party), not by how much they ask on the integrative issues (i.e., issues of mutual interests). Thus, negotiators who mentally simulate a strong alternative should claim more value from the negotiation than those who do not engage in this simulation (Hypothesis 4) because they demand more from the distributive issues (Hypothesis 5). Our theoretical model is depicted in Figure 1.

Interpersonal and Structural Limitations of Mental Simulations

An additional goal of this research was to identify and test potential limitations of mental simulation in interdependent contexts. Past research on mental simulation has primarily relied on

laboratory settings in which individuals' performance was independent of the behavior of other social actors and in which there were few, if any, structural constraints (Epstude & Roese, 2008; Roese, 1994, 1997). Even the few studies that tested the effects of mental simulation in contexts where actors are naturally interdependent generally focused on the cognitions and behavior of an isolated party or utilized tasks where agreement was relatively easy to achieve in contexts such as negotiations (e.g., Galinsky, Seiden, Kim, & Medvec, 2002; Kray et al., 2009), group decision-making (e.g., Galinsky & Kray, 2004), or inter-group settings (e.g., Stathi & Crisp, 2008; Turner, Crisp, & Lambert, 2007). Thus, it remains unclear whether the effectiveness of mental simulation is contingent on the behavior of the counterparty or structural aspects of a situation that make agreements more difficult to achieve. These are critical gaps in our understanding of mental simulation effects because most interpersonal interactions, including negotiations, do not operate in a social vacuum free of structural constraints. Thus, to further test our theoretical model of mental simulations we examined three distinct interpersonal and structural factors in the context of negotiation that can either attenuate or reverse the positive effect of mental simulations.

First offer order. First, we propose that mentally simulating attractive alternatives should only result in a negotiation advantage when the focal negotiator makes the first offer. Indeed, prior research has repeatedly demonstrated that high aspirations are particularly likely to translate into better negotiation outcomes when negotiators move first (Gunia et al., 2013; Loschelder et al., 2016). However, when negotiators move second, they are strongly influenced by the first offer they receive from their opponent and may rely less on their own aspirations when making counteroffers (e.g., Galinsky & Mussweiler, 2001; Schaerer, Loschelder, & Swaab, 2016). As a result, we propose that mentally simulating attractive alternatives will increase final negotiation outcomes when the focal negotiator makes the first offer, but less so when they move second (Hypothesis 6).

Simultaneous mental simulation. Second, we propose that imagining attractive alternatives will only yield a bargaining advantage when the mental simulation across negotiators is asymmetric. That is, mental simulation should be particularly helpful when focal negotiators have sufficient room to convert their high aspirations into more value claimed. In contrast, doing so is likely more challenging when the opponent is also engaging in mental simulation and more ambitious in their aspirations as a result. Thus, we predict that imagining attractive alternatives is more effective when the focal negotiator engages in mental simulation but their opponent does not (Hypothesis 7).

Non-overlapping walkaway points. Finally, we propose that imagining alternatives may backfire when parties' walkaway-points for a particular issue do not overlap sufficiently and make agreement challenging, or even impossible (e.g., Galinsky, Maddux, Gilin, & White, 2008; Maddux, Mullen, & Galinsky, 2008; Sinaceur, Maddux, Vasiljevic, Nückel, & Galinsky, 2013). Indeed, when the bargaining zone (i.e., the distance between negotiators' walkaway-points) for a particular issue is negative, setting high aspirations and making ambitious offers increases the difficulty of finding an agreement because negotiators are unlikely to accept offers below their walkaway-points (e.g., Pruitt & Rubin, 1986; Thompson, 1995). Instead, negotiators have to be creative and identify additional issues to transform negative bargaining zones on an issue into mutually beneficial agreements. This is less likely to occur when negotiators have very high aspirations and make very demanding offers that only set the parties' positions further apart.

The idea that mentally simulating alternatives can be detrimental in negotiations with a negative bargaining zone is consistent with prior research suggesting that negotiators who are too aspirational and too strongly focused on the outer boundaries of settlement are likely to lose sight of solutions that benefit themselves as well as their opponent (White & Neale, 1994). For example, past research showed that overly ambitious negotiators have a higher likelihood of

reaching an impasse than less ambitious negotiators (e.g., Huber & Neale, 1987; Korobkin, 2002; Morris, Nadler, Kurtzberg, & Thompson, 2002). Similarly, negotiators who made extreme first offers at the onset of the negotiation were less likely to reach a deal with their counterpart (Schweinsberg, Ku, Wang, & Pillutla, 2012). Thus, because boosting aspirations through mental simulation has the potential to increase the perceived distance between the two parties' positions, we predict that simulating strong alternatives will be detrimental in integrative contexts where negotiators have to reconcile their seemingly incompatible preferences (Hypothesis 8).

Overview of the Present Research

We test our predictions in seven studies that both measured and manipulated the mental simulation of alternatives to explore their impact on different types of mixed-motive interactions: tasks with differing preferences and priorities (Study 1), competitive zero-sum interactions (Studies 2-6), and tasks with conflicting positions that mask the compatibility of underlying interests (Study 7). Specifically, Study 1 validates a scale measuring the extent to which people imagine strong alternatives in their negotiations and correlates this with negotiators' ability to claim value during an interactive, face-to-face negotiation including multiple issues. Study 2 examines whether actively imagining alternatives prior to a negotiation can lead to more ambitious first offers because it increases negotiators' aspirations (Hypotheses 1-3). Study 3 uses a sequential negotiation paradigm with simulated opponents to test the effects of mental simulation on negotiation outcomes (Hypotheses 4-5). Study 4 is a face-to-face negotiation conducted in the laboratory and uses a confederate to manipulate negotiators' alternatives. In addition, Study 4 tests whether the effects of mental simulation on negotiation outcomes remain robust when participants are incentivized and negotiate about a real item. Study 5 is not only a constructive replication of the previous studies but also examines whether a distributive advantage emerges when negotiators imagine *any* alternative or only when they imagine an

attractive alternative. Study 6 uses a professional sample and an interactive negotiation via email to test whether the effects of mental simulation are weakened when the opponent makes the first offer (Hypothesis 6) and when the opponent also engages in mental simulation of attractive alternatives (Hypothesis 7). Finally, Study 7 examines whether the high aspirations generated by imagined alternatives backfire when negotiators' positions are difficult to reconcile in an interactive, face-to-face negotiation (Hypothesis 8). In our studies, we report all conditions and measures that were collected. Sample size and exclusion criteria were determined in advance.¹

Study 1: Imaginary Alternatives and Value Claiming

Study 1 assessed the extent to which negotiators have a tendency to simulate better alternatives and whether this tendency is associated with the amount of value claimed in a multiissue negotiation. Given the empirical evidence showing that higher aspirations are most likely to translate into more value claimed in distributive negotiations (e.g., Freshman & Guthrie, 2009; Galinsky & Mussweiler, 2001; Thompson, 1995; Van Poucke & Buelens, 2002; White & Neale, 1994), we predicted that negotiators who mentally simulate better alternatives would claim more value on the distributive issues (i.e., issues on which negotiators' interests are diametrically opposed). The negotiation task in Study 1 also contained integrative issues with a positive bargaining zone and compatible issues. Because integrative issues (i.e., issues on which negotiators have differential preferences and that require creativity for better performance) and compatible issues (i.e., issues on which both negotiators have the same preferences) are not naturally affected by aspirations (Huber & Neale, 1987) and first offers (Gunia et al., 2013; Loschelder, Swaab, Trötschel, & Galinsky, 2014), we did not expect mental simulations to affect these issues.

¹ Although we decided to exclude outliers for all experiments prior data collection, we also report robustness checks when outliers were included (see Supplementary Online Materials).

Participants.

Participants were 91 professionals (mean age = 29.33; SD = 2.09; 31.9% female) enrolled in a negotiation course as part of their Master of Business Administration program. Participants were randomly matched with a negotiation partner at the beginning of their interactive, face-toface negotiation.

Procedure.

Once assigned to their dyad, participants either took the role of the candidate or the recruiter in the *New Recruit* negotiation (Neale, 1997). New Recruit is a multi-issue negotiation in which parties negotiate the terms of a new employment contract (e.g., salary, vacation time, starting date). Negotiators' preferences were created by assigning points to each of eight issues and participants received a scoring system detailing the point structure (see Supplemental Online Materials). Two issues were distributive (e.g., candidates wanted a higher and recruiters a lower salary), two issues were compatible (e.g., both parties wanted the job to be in San Francisco), and the remaining four issues were integrative (e.g., bonus was more important to the candidate and vacation time to the recruiter; as a result, both negotiators could benefit from a large bonus packaged with little vacation time). Negotiators did not have an alternative (i.e., an impasse resulted in zero points) and could negotiate a maximum of 13,200 points. Participants were given confidential role instructions one week before the negotiation and were allowed 45 minutes to negotiate a deal face-to-face in their individual breakout rooms. After the negotiation, participants reported their outcomes to the course instructor and were debriefed.

Measures.

Imaginary alternatives. The extent to which negotiators engaged in mental simulation of attractive alternatives was measured in an unrelated survey at the end of the negotiation course several weeks apart from the actual study. We developed a five-item measure (see Supplemental

Online Materials) to capture this construct. Participants rated their tendency to imagine alternatives (e.g., "When I negotiate, I think about what it would be like to have a better offer.") on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). A pilot study with 100 participants recruited from across the United States via Amazon's Mechanical Turk (mean age = 33.55; SD = 12.00; 54.0% female) confirmed that the scale was internally reliable ($\alpha = .83$; M = 4.94; SD = 1.19).

To assess discriminant validity from other constructs that influence aspirations and negotiation outcomes, we analyzed how participants' imaginary alternative score correlated with sense of power (Anderson, John, & Keltner, 2012), optimism (Revised Life Orientation Test; Scheier, Carver, & Bridges, 1994), and the Big 5 personality traits (Gosling, Rentfrow, & Swann, 2003). None of these constructs correlated highly with our imaginary alternatives scale (all *r*s < .13; see Table 1).

To assess convergent validity, we examined to what extent participants' imaginary alternatives score correlated with their maximization tendencies (Schwartz et al., 2002). The maximization scale should covary with the imaginary alternatives scale as some items of the maximization scale assess how satisfied people are with their current situation and/or to what extent they hold themselves to high standards (Nenkov, Morrin, Schwartz, Ward, & Hulland, 2008). Indeed, there was a small correlation between the two constructs (r = .26, p = .01). To confirm that the imaginary alternatives scale and maximization tendencies are distinct constructs, we conducted an exploratory factor analysis with varimax rotation. Neither the maximization scale (nor any of the other constructs) cross-loaded highly with the imaginary alternatives factor as the primary factor, or vice versa (all loadings < .46). However, all five imaginary alternatives items loaded highly onto a single factor (all loadings > .71).

Negotiation outcome. We measured negotiators' individual points achieved on the distributive, integrative, and compatible issues, as well as their overall outcome.

Control variables. To rule out alternative explanations for our prediction, we controlled for negotiators' self-reported strategic intentions (3 item scale, $\alpha = .66$, e.g., "*I tend to behave in a strategic way*") and creativity (3 item scale, $\alpha = .88$, e.g., "*People would describe me as a creative negotiator*"), their perceived power (3 item scale, $\alpha = .84$, e.g., "*In general, I feel powerful*"), and their Big-5 personality trait scores (neuroticism, extraversion, openness, agreeableness, and conscientiousness) using the revised NEO Personality Inventory (NEO–PI–3) developed by McCrae, Costa, and Martin (2005). To address potential endogeneity concerns, we also controlled for whether negotiators were in the buyer or seller role, their age, and their gender. To account for within-dyad effects and rule out concerns over non-independence of individual observations, we clustered negotiators in their respective dyads and controlled for it using a Generalized Estimated Equations (GEE) regression model with a multilevel structure.

Results

All dyads reached an agreement. Hypothesis 1 predicted that negotiators who have a stronger tendency to simulate having attractive alternatives would also claim more value on the distributive negotiation issues, but not the integrative or compatible issues. This is what we found. Negotiators' imaginary alternatives score positively predicted value claimed on the distributive issues, b = .16, SE = .06, Wald(1) = 6.07, p = .014 (Model 1, Table 2), and this effect remained robust when we included the control variables in the model, b = .26, SE = .12, Wald(1) = 4.91, p = .027 (Model 2, Table 2). However, mental simulation neither predicted performance

on the integrative issues (ps > .28; Models 3-4, Table 2) nor on the compatible issues (ps > .15; Models 5-6, Table 2).

The significant effect of the tendency to simulate alternatives on negotiators' distributive outcomes combined with the effects on the integrative and compatible issues resulted in a significant effect on the overall negotiation outcome, b = .24, SE = .10, Wald(1) = 5.96, p = .015. (Model 7, Table 2). This effect was marginally significant when we included the control variables, b = .29, SE = .17, Wald(1) = 2.83, p = .093 (Model 8, Table 2).

Discussion

Study 1 found that negotiators who lacked an actual alternative claimed more value on the distributive issues as their tendency to engage in mental simulation increased. Consistent with our theorizing, mental simulation had no discernible effect on performance on the integrative or compatible issues. However, Study 1 did not *manipulate* the mental simulation of alternatives, preventing us from making causal inferences about the effects of mental simulation on performance and leaving it unclear whether negotiators actually simulated alternatives *during* the negotiation. In addition, Study 1 did not allow us to examine the underlying mechanisms because we could not measure aspirations and first offers. Study 2 addressed these issues by manipulating the mental simulation of alternatives immediately before the negotiation and examining its subsequent effects on negotiators' aspirations and first offers.

Study 2: Manipulating Imaginary Alternatives

The aim of Study 2 was to a) establish a causal link between the mental imagery of strong alternatives and negotiators' first offers and b) to show that this relationship is mediated by negotiator aspirations.

Participants and Design

Three hundred and six participants (mean age = 34.33; *SD* = 10.35; 42.8% female) were recruited on Amazon's Mechanical Turk in exchange for US\$.50. Participants were randomly assigned to a strong alternative condition, a no alternative condition, or an imaginary alternative condition.

Two participants took part twice (i.e., duplicate IP addresses), two participants failed the attention check, and fourteen participants reported extreme values (+/- 3SDs) for aspirations and/or first offers and were thus excluded from the analyses, leaving 288 participants in our final sample. These exclusion criteria were determined before data collection and applied consistently across all studies using online participants.

Procedure and Experimental Manipulation

Participants were instructed to sell a second-hand CD and were informed that a potential buyer asked them to make a first offer. Participants then received information about the alternative offers that they had secured or not. In the *strong alternative* condition, participants read: "You also know that another buyer has offered you \$8 for the CD. Thus, if you can't reach an agreement in the current negotiation, you will get \$8 for the CD." Participants in the *no alternative* condition read: "You also know that nobody else has offered you money for the CD. Thus, if you can't reach an agreement in the current negotiation, you will get \$8 not the CD." Participants in the *no alternative* condition read: "You also know that nobody else has offered you money for the CD. Thus, if you can't reach an agreement in the current negotiation, you won't get any money for the CD." Participants in the imaginary alternative condition received the same instructions as those in the no alternative condition, but also encountered an additional page of instructions asking them to complete a short thought exercise. Specifically, they were told:

Imagine yourself in a situation in which you have already secured a strong alternative offer from another buyer before entering the negotiation. Imagine what this strong alternative offer would look like, how it would feel like, and how it would affect your upcoming negotiation.

Dependent Measures

First offer and aspiration price. Following the manipulation, participants made a first offer to the buyer and indicated their aspiration price (i.e., the ideal price they would like to achieve in the negotiation).

Manipulation check. To assess participants' awareness of the imaginary alternatives manipulation, participants answered the question "*While completing the task, I was instructed to imagine an alternative offer that I did not have*" on a scale from 1 (*completely disagree*) to 7 (*completely agree*).

Finally, participants completed an attention check developed for online studies (Oppenheimer, Meyvis, & Davidenko, 2009) and reported demographic information.

Results

Manipulation check. Participants in the imaginary alternative condition reported that they were instructed to simulate having an alternative offer that they did not have to a greater extent (M = 5.51, SD = 1.95) than those in the strong alternative condition, (M = 3.07, SD = 2.35), t(285) = 7.32, p < .001, and those in the no alternative condition, (M = 3.20, SD = 2.55), t(285) = 6.97, p < .001. The latter two conditions did not differ (p = .71).

Aspiration price. Consistent with Hypothesis 1, negotiators in the imaginary alternatives condition had higher aspirations (M = 9.72, SD = 5.81) than those in the no alternative condition (M = 7.45, SD = 4.81), t(285) = 3.54, p < .001, d = .71. Those who had a strong alternative also set higher aspiration prices (M = 10.08, SD = 2.29) than those who had no alternative, t(285) = 3.54.

3.46, p = .001, d = .91. The strong alternative and imaginary alternative conditions did not differ (p = .92).

First offer. Consistent with Hypothesis 2, negotiators in the imaginary alternative condition made higher first offers (M = 11.20, SD = 6.53) than those in the no alternative condition (M = 8.65, SD = 5.67), t(285) = 3.44, p = .001, d = .42 (see Figure 2). Those who had a strong alternative also made higher first offers (M = 10.68, SD = 2.17) than those who had no alternative, t(285) = 2.75, p = .006, d = .47, but did not differ from those in the imaginary alternative condition (p = .49).

Mediation analysis. Next, a mediation analysis tested the prediction that imagining a strong alternative would lead to higher first offers *because* negotiators had higher aspirations. Because the independent variable was multicategorical, we used the indicator coding recommended by Hayes and Preacher (2013). The indirect effect of the indicator for the imaginary alternatives condition (1 = imaginary alternatives condition; 0 = all other conditions) was tested whilst controlling for a second indicator (1 = strong alternatives condition; 0 = all other conditions).² Negotiators' aspiration prices mediated the effect of simulating an alternative on first offers. A bootstrapping procedure with 5,000 resamples and a 95% bias-corrected bootstrap confidence interval (Preacher & Hayes, 2004) confirmed that there was a significant indirect effect, CI₉₅ [.8173; 3.758] (see Figure 3). These findings are consistent with the possibility that negotiators who simulated an attractive alternative (vs. those who had no

 $^{^{2}}$ There was also a significant indirect effect when the strong alternatives condition was dropped and only the no alternatives and the imaginary alternatives conditions were compared, CI₉₅ [.8336; 3.797].

alternative) made higher first offers because they set more ambitious aspiration prices (Hypothesis 3).

Discussion

Study 2 establishes that instructing negotiators to imagine attractive alternatives when they do not have any actual alternatives causes them to more ambitious first offers and that this may occur because of higher aspirations. Thus, this study demonstrates for the first time that actively imagining an alternative provides considerable benefits to negotiators who do not have an alternative.

Study 3: Negotiation Outcomes

The purpose of the third study was to examine not only whether mental simulation boosts negotiators' first offers but also whether this offer advantage translates into more profitable negotiation agreements. A second goal of Study 3 was to create a more realistic negotiation setting than in Study 2 by leading participants to believe that they actually had an alternative (or not) and were interacting with another individual rather than asking them to imagine this. To do so, we created a sequential negotiation paradigm whereby participants completed two negotiation rounds. The first negotiation round manipulated whether participants had an actual alternative or not because participants either received an attractive offer from a buyer (strong alternative condition) or were explicitly told that this buyer did not make them an offer (no alternative condition and imaginary alternative condition). Participants in the strong alternative condition could not accept their offer at this point and had to enter the second negotiation first. All

participants were then told that they would negotiate with another buyer in a second negotiation round, in which we measured their performance. Before this second round started, participants in the imaginary alternative condition were asked to mentally simulate having an attractive alternative. Thus, participants were led to believe that they had an actual alternative or not and also that they were negotiating over the course of two rounds with two different buyers. The study procedure is illustrated in Figure 4. We predicted that negotiators who did not receive an alternative (i.e., those who did not receive an offer in the first negotiation round) but simulated an attractive alternative, would reach more profitable agreements in the second negotiation round than those who did not receive an alternative and did not engage in mental simulation. We further predicted that this effect would be mediated by the size of the first offer.

Participants and Design

Participants were 154 individuals (mean age = 34.21; SD = 9.37; 48.1% female) recruited on Amazon's Mechanical Turk in exchange for US\$1.50. Participants were randomly assigned to a strong alternative condition, a no alternative condition, and an imaginary alternative condition. We excluded duplicate IP addresses (N = 1), extreme values for first offers and outcomes (+/-3SDs; N = 2), and participants who indicated that their (simulated) negotiation counterpart was not a real person (N = 2), resulting in a final sample of 149 participants.

Procedure and Experimental Manipulation

We took several steps to ensure that participants would perceive the negotiation as a real interaction with a real counterpart. First, the study was advertised as an interactive negotiation with other participants. Second, at the start of the study, participants entered a simulated online

waiting room where a counter indicated the number of participants who were presumably waiting for the study to begin. After about 30 seconds, the counter indicated that 20 participants had arrived in the waiting room at which point the participants proceeded to the following page where they read their role instructions. Third, participants were informed that they would conduct multiple rounds of negotiations with different participants and were also asked to enter a screen name that would ostensibly be shown to their negotiation partners. They then entered another waiting room, where they were led to believe that they would be matched with their first opponent and randomly assigned to the seller or buyer role (in reality, all participants assumed the role of the seller).

Before entering their first negotiation, participants received seller-specific information. They were told that their task was to sell a "Starbucks© Logo Mug", that the average market price for such mugs was approximately \$5, and that even if the first buyer made them an offer that they would be willing to accept, they had to negotiate with the second buyer first before deciding on which offer to accept. The system then ostensibly selected either them or their opponent to make an initial offer. In reality, the simulated opponent in the first round always made the opening offer. In the *strong alternative condition*, the simulated opponents offered \$8 for the participants' mug, along with the following message: "hey. I'm interested in your mug and my offer for it is \$8.00. I'm unable to pay more than \$8.00. this is my final offer – take it or leave it!" Participants in this condition could not accept this offer without first going through the second negotiation. In the *no alternative condition* and the *imaginary alternative condition*, the simulated opponent made no offer: "hey. Unfortunately, I am unable to make you an offer for your mug. sorry!" (see Figure 4).

Participants were then told that the first negotiation had ended and that they would be randomly matched with a different opponent for their second negotiation. This time, all participants were led to believe that they were "randomly" selected to make the first offer. Before making a first offer, participants in the *imaginary alternative condition* were instructed to imagine having an attractive alternative using the same manipulation as in Study 2 (see Figure 4). Thereafter, all participants made a first offer to the simulated opponent. The opponent then made a counteroffer at a pre-determined, increasing percentage of the participant's first offer. The participant could then choose to accept this offer or make a counteroffer. The negotiation opponent was programmed such that there would be a maximum of 10 negotiation rounds (each round including one offer and counteroffer).³ The counteroffer schedule also left open the possibility for negotiators to reach an impasse (six negotiations indeed ended with no agreement). The negotiation ended when a) participants accepted their simulated opponent's offer, b) participants' offers were lower than the simulated opponent's pre-programmed offer in the next round, or c) after no offer had been accepted after 10 rounds.

Dependent Measures

First offer and final agreement. We recorded participants first offer to the simulated buyer as well as their negotiation outcome in the second negotiation round.

Suspicion check. To further increase our confidence that participants believed that they interacted with real people, they were also asked to describe what their overall impressions of their opponents were. Our simulated negotiation setting was experienced as realistic because only two participants (1.3%) suspected that one or more of their opponents may not have been real.

Finally, participants reported demographic information and were debriefed.

Results

³ The counteroffer by the simulated opponent followed a logarithmic schedule with the first counteroffer reflecting 50 percent of the participant's first offer and the opponent's last (i.e., 10th) counteroffer reflecting 90 percent of the participant's first offer. The logarithmic counteroffer factor (.50, .62, .69..., .90) automatically rounded to the next tenth of a dollar (e.g., \$9.46 was rounded to \$9.50) to prevent suspicions that offers were calculated by a computer.

Impasses. Six of the 149 participants did not reach an agreement; four in the strong alternative condition, one in the no alternative condition, and one in the imaginary alternative condition. Impasses did not significantly differ across conditions, $\chi^2(2, N = 149) = 3.23$, p = .20.

First offer. Consistent with Hypothesis 2, sellers in the imaginary alternatives condition made higher first offers (M = 8.27, SD = 5.62) than those in the no alternative condition (M = 6.56, SD = 2.21), t(140) = 2.40, p = .018, d = .41. Those with a strong alternative (M = 9.70, SD = 1.03) made higher first offers than those in the imaginary alternatives condition, t(140) = 1.95, p = .054, d = .35, and higher first offers than those in the no alternatives condition, t(140) = 4.36, p < .001, d = 1.79 (Figure 5).⁴

Final agreement. Consistent with Hypothesis 4, sellers in the imaginary alternatives condition negotiated better agreements (M = 5.44, SD = 3.57) than sellers in the no alternative condition (M = 4.34, SD = 1.70), t(140) = 2.26, p = .026, d = .40. Those with a strong alternative (M = 7.30, SD = 1.32) reached more profitable agreements than those in the imaginary alternatives condition, t(140) = 3.72, p < .001, d = .69, and those in the no alternatives condition, t(140) = 6.03, p < .001, d = 1.93 (Figure 5).

Mediation analysis. We applied the same indicator coding procedure as in Study 2 to test whether first offers mediated the effect of imaging alternatives on final agreements. As predicted,

⁴ These patterns did not change when we included impasse dyads. Those who imagined to have an alternative made higher first offers than those who had no alternative, t(146) = 2.42, p = .017, d = .40. Also, those with a strong alternative made higher first offers than those in the imaginary alternatives condition, t(146) = 2.00, p = .047, d = .35, and significantly higher first offers than those in the no alternatives condition, t(146) = 4.47, p < .001, d = .74.

the amount of the first offer made by the seller mediated the effect of imaginary alternatives on final agreements. A bootstrapping procedure with 5,000 resamples confirmed a significant indirect effect, CI₉₅ [.2128; 4.060] (see Figure 6).⁵ These findings are consistent with the possibility that negotiators who simulated an attractive alternative (relative to those who had no alternative) may have achieved more advantageous final agreements because they made more ambitious offers (Hypothesis 5).

Discussion

Study 3 replicates the positive effect of imaginary alternatives on first offers and finds similar patterns for final agreements. In addition, Study 3 used a sequential negotiation design where powerless negotiators more vividly experienced not having an alternative and thought that they would interact with other individuals.

Study 4: Face-to-face Negotiation with Incentives

Study 4 improves upon the previous studies in a number of ways. Although Study 3 demonstrated that mental simulation can affect negotiation outcomes in a simulated interaction, there was no actual face-to-face contact between negotiators and their counterparts. Study 4 was therefore conducted in the laboratory and participants negotiated with a real opponent. Second, the stakes in Studies 1-3 were relatively low as negotiators' remuneration was not tied to their negotiation performance. However, past research has demonstrated that rewards may alter the dynamics of competitive social interactions (e.g., Kelley et al., 1970; Tenbrunsel, 1998) and

⁵ There was also a significant indirect effect when the strong alternatives condition was simply dropped and only the no alternatives and the imaginary alternatives conditions were compared, CI95 [.1044; 2.249].

moderate the influence of power differences on behavior more generally (for a review, see Schaerer et al., 2018). In the current study, negotiators could therefore earn monetary rewards and/or keep the negotiation item, depending on their role and bargaining performance. Third, for the current study, we pre-registered our predictions, sample size, and planned analyses on the Open Science Framework (OSF).⁶

Participants and Design

Three hundred undergraduate and master's students (mean age = 23.08; SD = 3.47; 70.0% female) participated in a laboratory study in exchange for $\notin 5$. Participants also had the opportunity to receive additional rewards contingent on their negotiation performance. We randomly assigned participants to 150 dyads and one of three experimental conditions: a strong alternative condition, a no alternative condition, or an imaginary alternatives condition. In line with the pre-registration protocol, we excluded one dyad that did not follow the instructions (i.e., incorrect first offer order) and three dyads that reported extreme values for the two numeric dependent measures (+/- 3SDs), leaving 146 dyads for our analyses.

Procedure and Experimental Manipulation

The negotiation task was similar to the one used in Study 3. Focal negotiators were assigned to the role of the seller and were tasked with selling a coffee mug to another person. In addition, sellers participated in two sequential negotiations with different counterparts, whereby the outcome of the first negotiation served as the alternatives manipulation for the second negotiation.

Upon arrival at the lab, participants were randomly assigned to seller and buyer roles and accompanied to isolated cubicles by the lab assistant. Buyers and sellers first read their role instructions in their individual cubicles. Sellers were informed that their task was to sell a coffee

⁶ The registration report can be accessed at: https://osf.io/7fz5v/?view_only=a7a9b74f26ce44cba75285eca7b6cf3e

mug at the highest price possible, that they would negotiate with two potential buyers, and that they should sell the mug to the seller who is willing to pay the most. Buyers were told that they should buy the mug at the lowest price possible, but that they should not pay more than $\in 10$. Buyers only negotiated with one seller. All participants were also told that the prices for mugs like these typically range from $\in 3$ to $\in 10$, with an average price of around $\in 5$. In contrast to the previous studies, each negotiator also entered in a lottery with a 10% chance of earning an incentive based on their negotiation performance. Specifically, sellers could win the exact monetary amount for which they sold the mug to the buyer (e.g., if they won the lottery, a seller who sold the mug for $\notin 6$ would receive $\notin 6$). Buyers could win the mug plus the difference between the sales price and their reservation price of $\notin 10$ (e.g., if they won the lottery, a buyer who bought the mug for $\notin 6$ would receive the mug plus $\notin 4$).

After reading their role instructions, sellers were informed that they would receive a phone call from the first potential buyer (played by a male confederate) in their individual rooms. This first negotiation served as our alternatives manipulation (see Figure 7). Sellers in the *strong alternative condition* received a phone call from the confederate who offered them \in 8. They were told that they would first negotiate with a second buyer before deciding on whether to accept this offer, but that they could later fall back on this offer in case they could not reach a better deal in the second negotiation. Sellers in the *no alternative condition* and in the *imaginary alternative condition* also received a phone call from the confederate who indicated that he is not interested in the mug and would thus not be able to offer any money for the mug. After the call and still in their individual cubicles, sellers in the *imaginary alternative condition* completed a similar mental simulation exercise as in Studies 2 and 3. Specifically, they were asked to briefly describe what it would be like to have an attractive offer from another buyer, what this offer would look

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and feel like, and how it would affect their upcoming negotiation with the second buyer. Sellers in the other two conditions directly proceeded to the second negotiation (see Figure 7).

Upon completion of the first negotiation, sellers were guided to a different room by the lab assistant where they encountered the second buyer (played by another participant). Sellers and buyers were seated at opposite ends of a table and instructed to negotiate the price of the coffee mug. Sellers opened the negotiation by making a first offer to the buyer.

Dependent Measures

First offer and final agreement. After the negotiation, both negotiators completed a short questionnaire in which they reported who made the first offer (to ensure that participants followed the instructions), what the first offer was, and what sales price (if any) they agreed on. First offers served as the mediating variable and final agreements as the dependent variable.

Participants then reported their demographics (e.g., gender, age), participated in the lottery by drawing a random ticket from a basket, and received their payment (as well as a bonus payment and/or a coffee mug if they won the lottery).

Results

Impasses. One of the 146 dyads did not reach an agreement in the second negotiation. Impasses did not significantly differ across conditions, $\chi^2(2, N = 146) = 1.99$, p = .37.

First offer. Consistent with Hypothesis 2, sellers in the imaginary alternative condition made higher first offers (M = 9.62, SD = 3.25) than those in the no alternative condition (M = 7.80, SD = 1.77), t(142) = 3.95, p < .001, d = .70 (see Figure 8). Those with a strong alternative (M = 9.48, SD = 1.29) made significantly higher first offers than those in the no alternative

condition, t(142) = 3.66, p < .001, d = 1.09, but did not differ from those in the imaginary alternative condition, t(142) = .31, p = .76, d = -.06.⁷

Final agreement. Consistent with Hypothesis 4, sellers in the imaginary alternative condition reached better agreements (M = 6.52, SD = 1.49) than sellers in the no alternative condition (M = 5.38, SD = 1.19), t(142) = 4.31, p < .001, d = .84. Those with a strong alternative (M = 6.80, SD = 1.17)⁸ reached more profitable agreements than those in the no alternative condition, t(142) = 5.42, p < .001, d = .1.20, but did not differ from those in the imaginary alternative alternative condition, t(142) = 1.09, p = .29, d = .21 (Figure 8).

Mediation analysis. We used the same indicator coding procedure as in Studies 2 and 3 to test whether first offers mediated the effect of mental simulation on negotiation outcomes. As predicted, sellers' first offers mediated the effect of imaginary alternatives on final agreements. A bootstrapping procedure with 5,000 resamples confirmed a significant indirect effect, CI₉₅ [.2252; 4.9279] (see Figure 9).⁹ These findings are consistent with the possibility that negotiators who

⁷ These patterns did not change when we included the dyad who reached an impasse. Those who imagined to have an alternative made higher first offers than those who had no alternative, t(143) = 3.88, p < .001, d = .68. Also, those with a strong alternative made higher first offers than those in the no alternatives condition, t(143) = 3.59, p < .001, d = 1.05, but did not differ from those in the imaginary alternative condition, t(143) = .31, p = .76, d = -.06. ⁸ The fact that some of the sellers in the strong alternative condition reached a deal that was lower than the offer of the first buyer (8 euros) is likely a reflection of the fact that participants believed that they could fall back on their deal from their first negotiation if they reached a worse deal in the second negotiation. Furthermore, past research has documented that «a substantial portion of individuals [reach] an agreement that [is] inferior to their best

alternative» (p.312) and that this occurs due to impasse aversion (Tuncel, Mislin, Kesbir, & Pinkley, 2016). ⁹ There was also a significant indirect effect when the strong alternatives condition was simply dropped and only the no alternative and the imaginary alternative conditions were compared, CI95 [.1044; 2.249].

simulated an attractive alternative (vs. those who had no alternative) may have achieved more advantageous final agreements because they made more ambitious offers (Hypothesis 5).

Discussion

Study 4 successfully replicates the effects found in the previous studies. In addition, Study 4 demonstrates that mental simulation continues to provide a distributive advantage in a setting where negotiators interacted with each other face-to-face and when negotiators' incentives were contingent on their performance at the bargaining table.

Study 5: Simulating Attractive vs. Unattractive Alternatives

The purpose of the next study was to further examine the psychological mechanism by testing *how* mental simulation influences negotiators' thoughts and behavior. According to Epstude and Roese (2008), two pathways exist through which mental simulation can influence behavior. The *content-specific pathway* suggests that "the particular information contained in the counterfactual (i.e., the lesson learned, or the belief in the causal effectiveness of a particular action) is funneled directly into a behavioral intention and, as a consequence, behavior" (p.171). Indeed, prior research has shown that upward mental simulation (e.g., thinking about how things could be better) is more likely to generate goal pursuit than downward simulation (e.g., thinking about how things could be worse; Epstude & Roese, 2008; Roese, 1994). The content-specific view is consistent with our reasoning that mentally simulating attractive alternatives causes negotiators to form more ambitious intentions (i.e., setting a higher aspiration price) which then translate into corresponding behavior (i.e., making more aggressive offers). According to this

logic, simulating an *unattractive* alternative should *not* lead to better negotiation performance, as the latter counterfactual does not contain aspiration-boosting information.

In contrast, the *content-neutral pathway* implies that mental simulation leads to "the activation of a more general style of information processing, or motivation to expend greater effort that results in behavior change" (Epstude & Roese, 2008, p.171). In other words, mental simulation operates *independently* of the specific information contained in the counterfactual. For example, Galinsky and Moskowitz (2000) demonstrated that the consideration of counterfactual alternatives led to the activation of a "counterfactual mindset" and subsequently affected thought and behavior on unrelated tasks. If the effect of mental simulation on negotiators' aspirations and behavior is driven by changes in more generalized processing styles or motivations, then the simulation of *unattractive* alternatives should activate an equally strong counterfactual mindset as attractive alternatives and thus lead to higher ambitions and more profitable negotiation outcomes.

To test whether the effects documented in the previous studies are due to the specific information contained in the mental simulation or due to the activation of a "counterfactual mindset," the present study instructed negotiators to simulate either an attractive or an unattractive alternative. Based on our theorizing, we predicted that simulating attractive alternatives would lead to better negotiation outcomes, while simulating unattractive alternatives would not.

A second purpose of Study 5 was to test a possible downside of mental simulation. It is possible that thinking about fictitious outside options may lead to reduced commitment to the focal negotiation and motivate opportunism (Malhotra & Gino, 2012). This is particularly problematic for powerless negotiators as it may cause them to forgo an opportunity on which they depend. Thus, we tested whether negotiators experienced different levels of commitment across

the experimental conditions. A third goal of Study 5 was to test the complete causal chain in our theoretical model (Figure 1) which proposed that the effect of mental simulation is sequentially mediated by negotiators' aspirations and their subsequent first offers.

Participants and Design

We recruited 1,200 participants (mean age = 34.81; SD = 12.57; 55.8% female) from Amazon's Mechanical Turk in exchange for US\$1.00. Participants were randomly assigned to an attractive imaginary alternative condition, an unattractive imaginary alternative condition, or a no mental simulation condition. As in Study 3, we excluded 31 participants because they took part twice (i.e., duplicate IP addresses; N = 4), because they reported extreme values for aspirations, first offers, and/or negotiation outcomes (+/- 3SDs, N = 20), and/or because they suspected that their (simulated) negotiation counterpart was not a real person (N = 7, 0.6%). The final sample consisted of 1,169 participants.

Procedure and Experimental Manipulation

The task was similar to the one used in Study 3. Participants assumed the role of a seller and completed two sequential negotiations with simulated buyers. However, in the current study, participants were instructed to sell an old car (rather than a coffee mug). They were given several pieces of information about the car such as model, color, purchase year, original price (\$23,000), and mileage. They were also told that a friend who is a car mechanic estimated the price at a maximum of \$2,500 and that a car pricing website placed the car value somewhere in the range of \$0 to \$2,000. Another difference to Study 3 was that in the current study the first negotiation always ended without a deal for the seller because the present design did not include a strong alternative condition. Thus, none of the participants had an alternative.

Before entering the second negotiation, participants were randomly assigned to one of three conditions. Participants in the two treatment conditions were asked to mentally simulate having either an attractive or unattractive alternative. Specifically, participants in the *attractive imaginary alternative* conditions read:

Imagine yourself in a situation in which you have received a very *attractive* offer for your old car from another buyer. Imagine what this very *attractive* offer would look like, how it would feel like, and how it would affect your behavior in the upcoming negotiation with Chris [simulated buyer].

Participants in the *unattractive imaginary alternative condition* received identical instructions, except that the word "attractive" was replaced by "unattractive:"

Imagine yourself in a situation in which you have received a very *unattractive* offer for your old car from another buyer. Imagine what this very *unattractive* offer would look like, how it would feel like, and how it would affect your behavior in the upcoming negotiation with Chris [simulated buyer].

Participants in the *no mental simulation* condition received no additional instructions and directly proceeded to the second negotiation.

Dependent Measures

Aspiration price. After completing the first negotiation (and mental simulation where applicable), sellers indicated their aspiration price. Aspiration price served as the first-stage mediator.

First offer. We recorded sellers' first offers to the simulated buyers in the second negotiation, which served as our second-stage mediator.

Final agreements. Final agreements were recorded at the end of the negotiation and served as our primary dependent measure.

Commitment. Sellers' commitment to the negotiation with the second buyer was measured by asking them to indicate "*How committed were you to your second negotiation*?" on a scale from 1 (*not at all*) to 7 (*to a great extent*).

Finally, participants completed the same suspicion check as in Study 3, reported demographic information, and were debriefed.

Results

Impasses. Nine of the 1,169 participants did not reach an agreement; five in the no alternative condition, two in the attractive imaginary alternatives condition, and two in the unattractive imaginary alternative condition. Impasses did not significantly differ across conditions, $\chi^2(2, N = 1,169) = 1.91$, p = .39. Because the purpose of this study was to examine the mediating effect on negotiation outcomes, we report aspiration and first offer data excluding participants who reached impasses. However, the predicted effects remain significant when impasses are included (all ps < .05).

Aspiration price. Consistent with Hypothesis 1 and replicating the effect found in Study 2, negotiators who simulated an attractive alternative set higher aspiration prices (M = 2,361, SD = 867) than those who did not engage in mental simulation (M = 1,981, SD = 770), t(1,157) = 6.93, p < .001, d = .46. Negotiators who simulated unattractive alternatives, on the other hand, had lower aspirations (M = 1,753, SD = 627) than those who did not engage in mental simulation, t(1,157) = -4.19, p < .001, d = .32.

First offer. Consistent with Hypothesis 2 and replicating Studies 2-4, negotiators who simulated an attractive alternative also made more ambitious first offers (M = 2,416, SD = 895) than those who did not engage in mental simulation (M = 2,080, SD = 821), t(1,157) = 5.83, p < .001, d = .39. In contrast, negotiators who simulated unattractive alternatives made lower first offers (M = 1,929, SD = 665) than those who did not engage in mental simulation, t(1,157) = -2.64, p = .008, d = -.20.

Final agreements. Consistent with Hypothesis 4 and replicating Studies 3-4, negotiators in the attractive imaginary alternative condition achieved more profitable agreements (M = 1,622,

SD = 638) than those who did not engage in mental simulation (M = 1,359, SD = 569), t(1,157) = 6.36, p < .001, d = .44. Negotiators who simulated unattractive alternatives, on the other hand, achieved lower outcomes (M = 1,272, SD = 507) than those who did not engage in mental simulation, t(1,157) = -2.10, p = .036, d = -.16 (see Figure 10).

Mediation analysis. Next, we tested whether aspiration prices and first offers sequentially mediated the effect of the attractive imaginary alternatives manipulation on negotiation outcomes. As in the previous studies, we estimated the indirect effect of the attractive imaginary alternatives indicator (1 = attractive imaginary alternatives condition; 0 = all other conditions) whilst controlling for a second indicator (1 = unattractive imaginary alternatives condition; 0 = all other conditions).¹⁰ A bootstrapping procedure with 5,000 resamples and a 95% bias-corrected bootstrap confidence interval (Preacher & Hayes, 2004) confirmed that the indirect effect was significant, CI₉₅ [152.15; 291.57] (see Figure 11). These findings are consistent with the idea that negotiators who simulated an attractive alternative (vs. those who had no alternative) may have achieved more advantageous final agreements because they first set more ambitious aspirations which then led them to make more demanding offers (Hypotheses 3 and 5).

¹⁰ There was also a significant indirect effect when the unattractive imaginary alternative condition was dropped and only the no alternatives and the attractive imaginary alternative conditions were compared, CI₉₅ [156.09; 269.79].
Commitment. Finally, we also tested whether negotiators' commitment to the second negotiation would vary as a function of whether they simulated alternatives or not. There were no significant differences of commitment across the three conditions (all ps > .30).

Discussion

Study 5 replicates the findings from the previous studies. More importantly, Study 5 tested the full serial mediation, which is consistent with the idea that simulating attractive alternatives may allow negotiators to reach better outcomes because it causes them to set higher aspirations that then translate into more ambitious first offers. Importantly, Study 5 also rules out the possibility that simply thinking about *any* alternative can lead to a distributive advantage. Negotiation outcomes only increased when negotiators mentally simulated an attractive alternative, but not when they simulated an unattractive one. Instead, mental simulation of an unattractive alternative resulted in lower aspirations, offers, and final agreements. This confirms our reasoning that mental simulation unfolds its effect by changing negotiators' behavioral intentions through specific information contained in the counterfactual (i.e., the content-specific pathway) rather than through differences in more general processing styles, or the activation of a "counterfactual mindset" (i.e., the content-neutral pathway). Finally, we found no evidence that mental simulation may cause negotiators to disengage from the subsequent negotiation and potentially lead to the loss of a valuable opportunity.

Study 6: The Contingent Effects of First Offer Order and Simultaneous Mental Simulation

In the sixth study, we wanted to test the hypothesized effects of first offer order and simultaneous simulation. Specifically, we predicted that mentally simulating attractive alternatives is most effective when the focal negotiator moves first and the opponent is not engaging in mental simulation, but less effective when the focal negotiator moves second and/or when the opponent also engages in mental simulation.

Participants and design

Participants were 514 professionals (mean age = 30.46; SD = 4.42; 38.2% female) pursuing a Master of Business Administration degree. The negotiation was part of an introductory leadership class in the first semester of the program. Participants completed the negotiation in dyads as part of their class preparations. Negotiators were randomly assigned to one of eight experimental cells of a 2(focal negotiator: control vs. mental simulation) x 2(opponent: control vs. mental simulation) x 2(first mover: focal negotiator vs. opponent) between-subjects factorial design¹¹. As in the previous studies, we excluded extreme values (+/-3SDs, N = 4) for our dependent measure of interest (i.e., final agreements). All of the dyads followed the instructed first offer order, resulting in a sample of 510 observations.

Procedure

Participants were randomly assigned to the role of a job candidate or a recruiter in a single-issue negotiation of a bonus payment (Galinsky & Mussweiler, 2001; Schaerer, Loschelder, et al., 2016). Both parties were told that they had already agreed on most terms of the job offer (salary, starting date, benefits), but that the signing bonus was yet to be discussed. Participants had five days to complete the negotiation over email and were allowed to exchange as many emails as they wanted to.

Experimental Manipulation

Imaginary alternatives manipulation. Participants in both the candidate and recruiter roles were randomly assigned to one of two alternatives conditions. Candidates [recruiters] in the *control condition* were told that they had secured a job offer at a comparable firm but without a

¹¹ Because in this study the negotiation was only about the bonus-aspect of the offer and we manipulated mental simulation for both sellers and buyers, we labelled the «no alternatives condition» as «control condition» (offer without bonus for candidate; no other candidate for recruiter) and the «imaginary alternative condition» as «mental simulation condition» instead.

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signing bonus [they would not be able to hire any candidate if they did not reach an agreement]. Candidates [recruiters] in the *mental simulation condition* read the same information as those in the no bonus condition but were also instructed to complete a thought exercise:

> Before starting the current bonus negotiation, imagine yourself in a situation in which you have already secured another comparable job offer but with a very high bonus from another company [you have the option to hire another comparable candidate for this position but for a very low bonus]. Imagine what this very high [low] bonus would look like, how it would make you feel, and how it would affect your upcoming bonus negotiation.

Both recruiters and candidates were also told that bonuses have averaged $\notin 12,000$ in the past. Candidates were instructed that they should aim for a bonus as high as possible but that any bonus would be better than ending up with no agreement. Recruiters were instructed that they should pay as little as possible but that they would end up without a new recruit if they cannot settle on a bonus of less than $\notin 30,000$.

First offer order. After reading their role materials, negotiators were instructed to initiate the negotiation by reaching out to their opponent with an offer or wait for their opponent to make a first offer, depending on their condition. In half of the dyads, candidates were instructed to move first, and in the other half of the dyads, recruiters moved first.

Dependent Measure

Upon completion of the negotiation, dyads reported their negotiation outcomes to the course assistant.

Results

Impasses. Of the 255 dyads in our sample, eighteen dyads did not reach an agreement. None of the manipulations significantly predicted impasse likelihood (ps > .65) and there were no significant interaction effects (ps > .32), suggesting that impasses were about equally distributed

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across the experimental conditions. Because the purpose of the study was to examine the limiting effects of simultaneous mental simulation and first offer order on negotiation outcomes, dyads who reached an impasse were excluded from the analyses (see also Tripp & Sondak, 1992).

Final agreement. As the purpose of this study was to test the effects of the focal negotiators' mental simulation as a function of opponent behavior, we analyzed the data at the individual level. To account for the nesting of individual negotiators in dyads, we used a mixed model approach with dyad as the cluster variable. In addition, we controlled for role to make sure that any effects we find would be independent of whether negotiators took the role of seller or buyer (results did not change when role was excluded as a covariate). We also standardized the negotiation outcomes of sellers and buyers such that a higher z-score indicates a better deal.

We hypothesized that the effects of mental simulation on negotiation outcomes would be weaker when the opponent moved first (Hypothesis 6) and when the opponent also engaged in mental simulation (Hypothesis 7). This is what we found (see Figure 12). There was a significant three-way interaction of the focal negotiator's mental simulation, the opponents mental simulation, and first offer order, F(1, 466) = 9.12, p = .003. Follow-up contrasts showed that when focal negotiators moved first and their opponents did not engage in mental simulation, focal negotiators who engaged in mental simulation reached better negotiation outcomes (M = .16, SD= .93) than those who did not engage in mental simulation (M = -.30, SD = 1.03), F(1, 466) =6.84, p = .009, d = .47. However, this effect was no longer significant when opponents moved first ($M_{No} = .30$, $SD_{No} = 1.03$; $M_{Imaginary} = .10$, $SD_{Imaginary} = .95$; F(1, 466) = 1.33, p = .25, d = .20), when opponents also engaged in mental simulation ($M_{No} = -.10$, $SD_{No} = .95$; $M_{Imaginary} = -.21$, $SD_{Imaginary} = .87$; F(1, 466) = .45, p = .50, d = .13), or when opponents moved first *and* engaged in mental simulation ($M_{No} = -.06, SD_{No} = .94; M_{Imaginary} = .21, SD_{Imaginary} = .87; F(1, 466) = 2.47, p = .12, d = .30$).¹²

Discussion

Study 6 again replicated the effects of mental simulation on negotiation outcomes documented in the previous studies, but also uncovered additional boundary conditions of mental simulation. Negotiators no longer benefitted from mental simulation when their opponent moved first – likely because they were anchored by their opponents' first offer – and/or when their opponent simultaneously engaged in mental simulation – making it tougher for negotiators to translate their higher aspirations into more value claimed.

Study 7: When Mental Simulation Backfires

Across six studies we found that mental simulation of strong alternatives can lead to a distributive advantage by increasing powerless negotiators' aspirations and first offers when the focal negotiator makes the first offer and when their opponent does not engage in mental simulation. However, we also predicted that more ambitious negotiation behavior would create a roadblock to agreement when the dominant issue in the negotiation is difficult to reconcile for the parties involved. To test this final hypothesis, Study 7 examined the impact of mental simulation on agreement likelihood in a negotiation context where the bargaining zone was negative.

Participants and Procedure

¹² Although the focus in this study was to examine the effects of mental simulation, opponent behaviour, and first offer order on negotiation outcomes, we also found consistent results when we analysed the effects of mental simulation and first offer order on first offers size. Engaging in mental simulation (vs. not) led to more ambitious offers (p < .001) when focal negotiators moved first, but had no effect when the opponent moved first (p = .64).

Participants were the same Master of Business Administration students as in Study 1, but assigned to a different negotiation partner and a different interactive, face-to-face negotiation task. Sample size (N = 97) and demographic characteristics (mean age = 29.24; SD = 2.19; 33.3% female) varied slightly compared to Study 1 due to differences in class attendance. Participants were randomly assigned to the role of the buyer or seller in the Les Florets negotiation (negotiationexercises.com), which involved the sale of a restaurant. The negotiation made it impossible to reach a deal based on sale price of the restaurant alone because it involved a negative bargaining zone such that the buyer's reservation price (the maximum he or she was authorized to pay) was lower than the seller's reservation price (the minimum he or she was willing to accept). Although the bargaining zone was negative for the sales price, the two parties had a common underlying interest that made agreement possible (although difficult). Specifically, the buyer wanted to hire a qualified manager to run the restaurant, and the seller needed a job upon return from a trip around the world. Thus, the two parties could agree to a sale price below the seller's reservation price as long as the buyer would provide future employment to the seller. However, reaching this deal was challenging because it required participants to discover this alternative solution during the negotiation process. Participants were given their confidential role instructions one week before the negotiation and were allowed 35 minutes to negotiate a deal in individual breakout rooms.

Measures

Imaginary alternatives. Our independent variable was the same imaginary alternatives scale as in Study 1.

Impasses. The dependent variable measured whether negotiators declared an impasse (1) or reached a deal within the boundaries of the role instructions (0).

Control variables. As in Study 1, we controlled for self-reported strategic intentions, creativity, perceived power, the Big-5 personality traits, negotiator role, age, and gender. To account for within-dyad effects and rule out concerns over non-independence of individual observations, we clustered negotiators in their respective dyads and controlled for it using a multilevel regression model.

Results

We predicted that impasses would be more likely for negotiators who think more strongly about better alternatives. Sixty-eight percent of negotiations resulted in an impasse, confirming that it was difficult for negotiators to reach a deal without uncovering their mutual interests. Because the individual negotiators were nested in dyads and the dependent measure was dichotomous, we analyzed the data using multi-level General Linear Equations (GLE) model with a binomial distribution and logit link. Consistent with Hypothesis 8, we found that impasses were more likely the more negotiators reported to engage in mental simulation of alternatives, b = .55, SE = .18, Wald(1) = 9.49, p = .002 (Model 1, Table 3). This effect remained robust when we included the control variables, b = .84, SE = .30, Wald(1) = 7.85, p = .005 (Model 2, Table 3).

Discussion

Study 7 supports our prediction that mentally simulating better alternatives not only facilitates claiming value, but also decreases the likelihood of an agreement when the negotiators' positions are difficult to reconcile. When negotiators face a negative bargaining zone, high aspirations and ambitious offers resulting from mental simulations hurt rather than help.

Internal meta-analysis

To test the robustness of our effects and generate an effect size estimate free of publication bias, we conducted a meta-analysis (e.g., Cumming, 2014) of the 5 experimental studies reported in this manuscript and an additional 8 studies not included in the current version of the manuscript (e.g., studies that were included in the original submission, underpowered or tested additional moderators). A fixed-effects meta-analysis comparing the average standardized mean difference between the baseline condition (no alternative) and the experimental condition (imaginary alternative) revealed a significant effect of mental simulation on aspiration prices, k = 6, d = .48, 95% CI [.38, .58], Z = 9.31, p < .001, first offers, k = 13, d = .41, 95% CI [.33, .49], Z = 10.11, p < .001, and negotiation outcomes, k = 7, d = .42, 95% CI [.32, .52], Z = 7.96, p < .001. These findings speak to the robustness of the reported effect and corroborates the idea that simulating alternatives enables powerless negotiators to compete more effectively.

General Discussion

Practitioners, scholars, and people's lay perceptions all suggest that negotiators should obtain alternatives, because alternatives are the most important source of power in a negotiation. Despite the well-documented benefits of strong alternatives, negotiators are not always able to generate these. In fact, negotiators are often unable to obtain any alternatives at all, which causes them to lower their aspirations (Wong, 2014), decreases their willingness to negotiate (Magee et al, 2007), and results in less profitable agreements (Pinkley et al., 1994). Counter to this assumption, we proposed that powerless negotiators are not destined to fail and can still set higher aspirations, make more extreme first offers, and reach more profitable agreements when they *simulate* having attractive alternatives.

Across seven simulated and interactive negotiations conducted online, via email, and faceto-face, we found that both measured and manipulated mental simulations of attractive alternatives can help negotiators overcome their disadvantaged position. Our studies provide compelling evidence for when and why the mental simulation of alternatives is desirable. First, we found that negotiators who have a tendency to simulate attractive alternatives also claimed more value on the distributive issues in an integrative negotiation (Study 1). Second, we found that these mental simulations led to higher aspirations (Studies 2 and 5) as well as more extreme first offers (Studies 2-5). Higher aspirations and more ambitious first offers in turn may have led to more profitable negotiation outcomes (Studies 3-6), but only when the simulated alternative was attractive (Study 5) and when negotiators moved first and their opponent did not simultaneously engage in mental simulation (Study 6). Importantly, our final study (Study 7) showed that the aspiration-boosting effect of imaginary alternatives could also hurt when negotiators' positions are already difficult to reconcile.

Theoretical Contributions

Competing effectively from a position of powerlessness

The present research makes important contributions to the literature on social power (e.g., Anderson & Brion, 2014; Galinsky, Rucker, & Magee, 2015) by answering a call for more research on powerlessness (e.g., Kopelman, Hardin, Myers, & Tost, 2016). Past power studies have primarily been concerned with investigating the cognitive, motivational, and behavioral implications of being power*ful* but have neglected to more thoroughly examine the psychology of being power*less* (Schaerer, du Plessis, et al., 2016). The present studies extend this research by illuminating the mechanisms that allow powerless individuals to reap some of the benefits that power provides in mixed-motive interactions. These findings also align with a growing body of work (e.g., Mishra, Barclay, & Lalumière, 2014; Pitesa & Thau, 2013; Zitek, Jordan, Monin, & Leach, 2010) investigating the psychological experiences associated with being powerless and identifying ways in which the disadvantaged negotiate hierarchical differences. Our studies suggest that the mental imagery of what it would be like to be in a better position can be a powerful way for powerless individuals to compete more effectively.

Reaping the cognitive benefits of real alternatives

In addition, the present research advances our understanding of the influence of alternatives on negotiator cognition and behavior. Specifically, it shows that some of the benefits that alternatives provide can also be achieved through different means. Research on power and negotiations assumes that alternatives are a prerequisite to negotiating successfully (Kim et al., 2005; Magee et al., 2007; Pinkley, 1995; Pinkley et al., 1994; Thompson et al., 2010). That is, actual alternatives are perceived as an instrument that enables negotiators to exercise pressure on their opponents and that serves as a safety net that protects against a bad deal. Yet, more recent research has begun to highlight the dual nature of alternatives: strong alternatives not only provide leverage, but also serve as salient anchors that cause negotiators to make more ambitious first offers (Schaerer et al., 2015). Thus, alternatives offer both power and cognitive benefits. According to this logic, negotiators need not have actual alternatives to reap the *cognitive benefits* that strong alternatives provide. The present studies are consistent with this insight by showing that negotiators can generate their own ambitious aspiration prices through mental simulations, which eventually translate into higher offers and more profitable agreements when negotiators' interests overlap. Thus, negotiators can act more powerfully without having power.

One question directly emerging from this discussion is whether simulated alternatives are *as effective* as real alternatives. Although our studies have shown that engaging in mental simulation (vs. not) can lead to substantial improvements in negotiation outcomes, there are certain benefits of having real alternatives that mental simulation cannot replace. For example, having a strong alternative allows negotiators to make a credible threat about leaving the negotiation table if their expectations are not met by the opponent. Although negotiators who

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mentally simulate alternatives may still be able to make such threats (e.g., by bluffing; see also Shalvi, Dana, Handgraaf, & De Dreu, 2011), doing so can backfire if an opponent tries to verify the validity of such threats. In addition, merely simulating an alternative may reduce negotiators' motivation to generate actual alternatives. Thus, despite the considerable benefits of mental simulation, negotiators should always try to obtain a strong alternative first, and only engage in mental simulation as a complimentary measure.

Mental simulation in interdependent contexts

The present research also contributes to existing theoretical perspectives on the social psychology of mental simulations in competitive interactions and illustrates the boundary conditions in interdependent settings. First, our findings extend the functional view of counterfactual thinking (e.g., Epstude & Roese, 2008) by providing a clear example of how counterfactual thoughts increase economic gains in mixed-motive interactions. We also extend research on the link between counterfactuals and negotiation behavior (Kray, Galinsky, & Markman, 2009), which has contrasted the strength of different types of counterfactual thinking with each other (i.e., additive vs. subtractive counterfactuals) by examining reflections about past negotiation. However, this research did not show whether mental imagery could result in economic advantages over baseline participants. The present studies show that it does.

Second, our research provides evidence for a novel mechanism through which mental simulations affect negotiations. Prior research has primarily argued that counterfactual reflections allow negotiators to learn from their past experiences and negotiate more effectively as a result (Kray et al., 2009; Wong et al., 2012). The current studies extend these findings by uncovering a cognitive, aspiration-based route through which counterfactual thoughts may influence behavioral outcomes. The comparison of mentally simulating attractive vs. unattractive alternatives (Study 5) revealed that the type of information that is simulated matters and that

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simply simulating *any* alternative is not sufficient to generate a distributive advantage. In doing so, our studies provide support for the content-specific pathway of mental simulation (Epstude & Roese, 2008) and rule out the alternative explanation that mental simulation simply led to more general differences in negotiators' processing style, or a "counterfactual mindset."

Finally, the present studies are among the first to show the boundary conditions of mental simulation in the context of interdependence. Past research has primarily studied the effects of mental simulation on individuals' thoughts and behavior without systematically taking into consideration the broader social context (for reviews, see Epstude & Roese, 2008; Roese, 1997). Extending this research, our studies show that when one's outcomes are diametrically opposed to those of another individual, mental simulation is no longer effective when both individuals use this strategy or when one does not have the opportunity to move first (Study 6). Moreover, Study 7 showed that mental simulation can even backfire. When the situation makes it hard for two negotiators to reconcile their preferences and positional behavior is not useful as a primary strategy, mental simulation may pose a roadblock to agreement.

Strengths, Limitations, and Future Directions

The present research has a number of strengths. First, in examining the influence of imaginary alternatives on negotiator cognition, behavior, and outcomes, we systematically replicated our effect across various studies including scenarios, simulations, laboratory experiments, and negotiations between experienced professionals. This not only enabled us to establish the existence of the effect, but also allowed us to demonstrate the generalizability of the distributive advantages mental simulations can have across a wide range of negotiations. Second, we conducted an internal meta-analysis including the file-drawer to provide both a more *precise* (i.e., narrower confidence intervals) and a more *accurate* (i.e., free of publication bias) estimate of the effect. In doing so, we not only demonstrate the robustness of our findings but also respond

to a call for more meta-analytic research and unlocking the file-drawer (Cumming, 2014; Franco, Malhotra, & Simonovits, 2014) to provide more conservative effect size estimates (Ioannidis, 2008). Third, we go beyond prior research on power and negotiation by manipulating the presence of alternatives through a sequential study design (see Studies 3-5) in which the outcome of a first negotiation serves as the power manipulation for a second negotiation and thus provides a more vivid and realistic experience of having or lacking an alternative. Past research has primarily provided information about alternatives through artificial point systems presented in the task materials (Galinsky & Mussweiler, 2001; Pinkley, 1995; Pinkley et al., 1994). To further increase the external validity of our findings, we also provided real incentives and rewarded negotiators financially depending on their performance (Study 5). In doing so, we answer a call for systematically taking into account organizational realities into experimental social power research (Schaerer et al., 2018).

The current research also has limitations that provide exciting opportunities for future research. First, a potential downside of boosting one's aspirations through mentally simulating attractive alternatives could be that it lowers satisfaction with the negotiation outcome. Evaluations are often contrastive (Kahneman, 1992) and so whether a particular outcome is perceived as a gain or loss depends on a reference point's relative position. Individuals who compare their outcomes to a low reference point tend to be more satisfied than those who compare their outcome to a high reference point (Galinsky, Mussweiler, & Medvec, 2002; Medvec, Madey, & Gilovich, 1995; Medvec & Savitsky, 1997). Thus, negotiators who mentally simulate aspirational alternatives may end up feeling less satisfied about a financially better outcome. Since negotiators tend to care strongly about both objective and subjective outcomes (Curhan, Elfenbein, & Xu, 2006), future research could investigate whether negotiators would prefer an objectively better, but less satisfying, outcome over an objectively less attractive, but more satisfying outcome, and how this would affect their propensity to engage in mental simulation.

Second, our findings may appear to be at odds with other research suggesting that contrasting one's own position with a higher standard, or reference point, can be ego-deflating and thus have a negative effect on aspirations (e.g., Collins, 1996). However, Lockwood and Kunda (1997) suggest that a critical factor that determines whether "high" reference points lead to self-enhancement or self-deflation is the extent to which those reference points are attainable. Reference points tend to have positive effects on aspirations when they are within the realm of the possible, but negative effects when they are unattainable (Lockwood & Kunda, 1997). Thus, it is likely that the negotiators in our studies simulated alternatives that they considered as attainable, which, in turn, had a positive effect on their aspirations and negotiation outcomes. Future research may test whether explicitly instructing negotiators to simulate unrealistically high alternatives may attenuate the distributive advantage documented in the present research.

Third, Studies 1 and 7 were correlational in nature and thus do not allow us to make causal claims about the effects of mental simulation on negotiation performance. Although we demonstrated the divergent validity of the scale measuring the propensity to engage in mental simulation and controlled for a variety of alternative explanations, it is possible that other constructs may affect both mental simulation and changes in negotiation performance. Nevertheless, the fact that mental simulation positively predicted negotiation performance on the distributive issues (Study 1) and at the same time negatively predicted the likelihood of finding an agreement when the bargaining zone was negative (Study 7) provides indirect support for our conclusions. We encourage future research to more systematically compare and contrast individual differences in the propensity to engage in mental simulation versus spontaneous mental simulation, as well as the contexts in which they might differentially affect behavior. Fourth, the present research primarily focused on a type of mental simulation that can improve negotiators' individual outcomes. However, mental simulation may also be a fruitful way to promote integrative behavior and cooperative attitudes. For example, mental simulation has been shown to increase information sharing in groups (Galinsky & Kray, 2004) and may even promote more positive perceptions in intergroup interactions (Crisp & Turner, 2009). Future research may test whether mental simulation can help negotiators to maximize their joint profit instead of their individual profit. For example, simulating how negotiation attributes are malleable (vs. fixed) may lead to a reduction in fixed-pie perceptions (Thompson & Hastie, 1990), one of the major reasons why negotiators fail to realize integrative potential. Future research may also find ways to combine the two, such that mental simulation not only leads to better individual gains but simultaneously maximizes joint gains.

Finally, in studying powerlessness in negotiations, we chose to focus on the most extreme case of powerlessness in which negotiators lack an alternative altogether. However, sometimes negotiators have little power not because they lack an alternative but because their alternative is very unattractive (e.g., a low-ball offer from another buyer). Although we did not test our hypotheses in the context of weak alternatives, we believe that mental simulation should still be effective in such cases. We noted earlier that lacking alternatives lowers negotiators' aspirations, confidence, and willingness to negotiate (e.g., Magee et al., 2007; Wong, 2014) and that mental simulation helps improve aspirations. Recent research suggests that weak alternatives can also have a detrimental effect on negotiators' aspirations and first offers (Schaerer et al., 2015). In addition, we believe more research is needed to better understand the differences between having a weak or no alternative. For example, although receiving unemployment benefits is – at least in theory – a viable alternative for job candidates without any other offers, people may not consider

it as an alternative and see themselves as having no power at all. Whether negotiators include alternatives in their choice set may depend on factors such as informational relevance and similarity between the potential alternative and the issue to be negotiated.

Conclusion

Although there is little doubt that strong alternatives are key to bargaining success, more often than not, negotiators come to the negotiation table without an alternative. The studies reported here, however, suggest that the mental imagery of an attractive alternative can still afford negotiators a distributive advantage and compensate for some of the ambitiousness that strong alternatives typically provide. Mental simulation proved to be a subtle way for negotiators to escape their powerless situations when there was sufficient room for more ambitious offers to translate into more profitable agreements, but may not be effective when counterparts do the same, make the first offer, or when negotiators' positions are difficult to reconcile.

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Table 1

Convergent and discriminant validity of Imaginary Alternatives Scale (Study 1).

Predictor	r (zero-order		
	correlation)		
Maximization	.26**		
Sense of Power	.06		
Optimism	10		
Big 5 Personality Dimensions			
Extraversion	.13		
Emotional stability	.02		
Openness to experience	.05		
Agreeableness	01		
Conscientiousness	06		

Table 2

Dependent variable:	Distributive issues (z-scored points)		Integrative issues		Compatible issues		Overall outcome	
	(1) Baseline	(2) Incl. controls	(3) Baseline	(4) Incl. controls	(5) Baseline	(6) Incl. controls	(7) Baseline	(8) Incl. controls
Imaginary alternatives	.16* (.06)	.26* (.12)	00 (.01)	02 (.02)	.10 (.07)	.09 (.07)	.24* (.10)	.29 [†] (.17)
Strategic intentions		.15 (.17)		.02 (.02)		.05 (.06)		.15 (.17)
Creativity		.06 (.10)		03** (.01)		.03 (.05)		.01 (.13)
Power		11 (.12)		00 (.02)		10 (.8)		14 (.17)
Neuroticism		01 (.01)		.00 (.00)		01 (01)		01 (.01)
Extraversion		.00 (.01)		.00 (.00)		.00 (.00)		.01 (.01)
Openness		.00 (.01)		$.01^{\dagger}$.01 (.01)		.03 (.02)
Agreeableness		00 (.01)		.00		.04 (.01)		.00 (.01)
Conscientiousness		.00 (.01)		00 (.00)		.01 (.01)		00 (.01)
Role		.10 (.22)		01 (.03)		10 (.16)		.17 (.29)
Age		10 (.22)		00 (.01)		.01 (.02)		04 (.07)
Gender		.04 (.20)		07* (.03)		.11 (.08)		.12 (.30)
Intercept	77* (.32)	63 (1.73)	.01 (.06)	08 (.23)	47 (.38)	-1.14 (1.77)	-1.16* (.48)	-2.32 (2.47)
Observations QICC	72 26.74	46 39.24	72 5.29	46 26.37	72 37.74	46 14.71	91 87.68	58 73.13

Multilevel general linear model predicting points achieved by issue type (Study 1).

Note. General linear model with nested dyads, normal distribution, and identity link. Regression coefficients are standardized. Standard errors are reported in parentheses. The number of observations is lower in Models 2, 4, 6, and 8 due to missing values. A smaller QICC score indicates a better goodness of fit. $\dagger p \le .10$, $* p \le .05$, $** p \le .01$, $*** p \le .001$

Table 3

Dependent variable:	Baseline	Including
Impasses		controls
-	(<i>Model</i> 1)	(Model 2)
Imaginary alternatives	.55**	.84**
	(.18)	(.30)
Strategic intentions		10
		(.50)
Creativity		37
		(.35)
Power		.29
		(.42)
Neuroticism		03
		(.04)
Extraversion		.00
		(.03)
Openness		.02
		(.03)
Agreeableness		06†
		(.04)
Conscientiousness		04
		(.04)
Role		24
		(.59)
Age		.39*
		(.19)
Gender		02
		(.50)
Intercept	-1.84*	-8.19
*	(.89)	(8.42)
Observations	97	60
QICC	118.56	85.21

Multilevel general linear model predicting impasses (Study 7).

Note. General linear model with nested dyads, binomial distribution, and logit link. Regression coefficients are unstandardized. Standard errors are reported in parentheses. The number of observations is lower in Model 2 due to missing values for the control variables. A smaller QICC score indicates a better goodness of fit. $\dagger \le .10$, $p \le .05$, ** $p \le .01$, *** $p \le .001$

Graphic illustration of theoretical model.





Aspiration price mediated the relationship between the imaginary alternatives manipulation and first offers. Regression coefficients are unstandardized and SEs in parentheses (Study 2). * p < .05, ** p < .01, *** p < .001.





Graphic illustration of procedure in Study 3.

Sellers in the imaginary alternatives condition made higher first offers (top panel) and reached better agreements (bottom panel) than those in the no alternatives condition (Study 3). Error bars indicate ± 1 SEM.



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First offer size mediated the relationship between the imaginary alternatives manipulation and final agreements. Regression coefficients are unstandardized and SEs in parentheses (Study 3). *p < .05, **p < .01, ***p < .001.





Graphic illustration of procedure in Study 4.
Sellers in the imaginary alternatives condition made higher first offers (top panel) and reached better agreements (bottom panel) than those in the no alternatives condition (Study 4). Error bars indicate ± 1 SEM.



First offer size mediated the relationship between the imaginary alternatives manipulation and final agreements. Regression coefficients are unstandardized and SEs in parentheses (Study 4). * p < .05, ** p < .01, *** p < .001.



Negotiators in the attractive (unattractive) imaginary alternative condition reached better (worse) deals than those in the no mental simulation condition (Study 5). Error bars indicate ± 1 SEM.



Aspiration price and first offer sequentially mediated the relationship between the attractive imaginary alternatives manipulation and final agreements. Regression coefficients are unstandardized and SEs in parentheses (Study 5). *p < .05, **p < .01, ***p < .001.



Negotiators in the imaginary alternatives condition reached better agreements than those in the control condition, but only when they moved first and their opponent did not engage in mental simulation (Study 6). Error bars indicate ± 1 SEM. ** p < .01

Focal negotiator moves first



Opponent moves first

