

Mental Models at Work:
Cognitive Causes and Consequences of Conflict in Organizations

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This research investigated the reciprocal relationship among mental models of conflict and various forms of dysfunctional social relations in organizations, including experiences of task and relationship conflicts, interpersonal hostility, workplace ostracism, and abusive supervision. We conceptualize individual differences in conflict construals as reflecting variation in people's belief structures about conflict, and explore how different elements in people's associative networks – in particular, their beliefs about their best and worst strategy in conflict – relate to their personality, shape their experiences of workplace conflict, and influence others' behavioral intentions toward them. Five studies using a variety of methods (including cross-sectional surveys, a 12-week longitudinal diary study, and an experiment), show that best strategy beliefs relate in theoretically meaningful ways to individuals' personality; shape social interactions and relationships significantly more than worst strategy beliefs; and are updated over time as a result of individuals' ongoing experiences of conflict.

Keywords: Conflict; mental models; personality; best strategy; interdependence theory; HEXACO.

Different individuals subscribe to profoundly different views of conflict. Some believe that they must dominate others to achieve their aspirations whereas others believe that mutual cooperation is essential for achieving their aspirations. Some believe that the worst outcome occurs when cooperation is exploited (i.e., when they are “suckered”), whereas others believe that the worst outcome occurs when competition is reciprocated (i.e., a head-on collision). These subjective beliefs play a critical role in determining individual behavior in social interactions, thereby shaping the course and outcomes of numerous conflicts (Deutsch, 1973; Halevy, Chou, & Murnighan, 2011; Kiyonari, Tanida, & Yamagishi, 2000).

The current research conceptualizes individual differences in the construal of conflict as reflecting variation in people’s mental models, or belief structures, about conflict. Different people experience the world differently—they encounter different environments and have different behavioral tendencies. Over time, these experiences and tendencies may lead them to develop different beliefs about conflict. For example, a person who experiences or observes an environment in which dominating others results in highly satisfactory outcomes for the dominating person will likely develop a mental model in which dominance is strongly associated with attaining one’s best outcome. Conversely, a person who experiences or observes an environment in which collaborating with others results in highly satisfactory outcomes will likely develop a mental model in which collaboration is strongly associated with attaining one’s best outcomes.

This repeated sense-making process results in belief structures in which concepts are differentially interconnected with each other (e.g., Anderson, Benjamin, & Bartholow, 1998; Anderson & Bushman, 2002). Specifically, concepts that are frequently activated simultaneously become strongly associated whereas concepts that are rarely activated simultaneously become

only weakly associated. As a result of this process, cueing of a particular concept (e.g., best outcome) is likely to activate a strongly associated concept (e.g., dominance), but not a weakly associated concept (e.g., collaboration; cf. Anderson & Huesmann, 2003; van Boven & Thompson, 2003).

Conceptualizing individual differences in conflict construals as variation in belief structures raises a number of interesting questions: How do stable individual differences in personality traits relate to variation in people's beliefs about their best and worst strategies in conflict? How do different elements within individuals' mental models of conflict relate to their real-world experience of conflict? And, how do experiences of conflict influence individuals' mental models of conflict? The current research investigated these theoretically and practically important questions in five studies. Our framework for conceptualizing mental models draws from interdependence theory (Kelley & Thibaut, 1978; Kelley et al., 2003) and game theoretic approaches to social interaction (Camerer, 2003; Colman, 1995; Schelling, 1960), which we outline below.

An Interdependence Approach to Mental Models of Conflict

Consistent with game-theoretic models of social interaction (Camerer, 2003; Colman, 1995; Schelling, 1960), interdependence theory views most conflict situations as bargaining situations (Kelley & Thibaut, 1978). The *Atlas of Interpersonal Situations* (Kelley et al., 2003), in particular, uses two-person bargaining games to represent dyadic social interactions. Each of these games involves two players, each facing a choice between two available strategies (often labeled cooperation and competition; Zhong, Loewenstein, & Murnighan, 2007). The players' choices in the game determine their respective outcomes, which are ranked from best to worst.

Previous research on the mental representation of conflict from an interdependence perspective found that individuals meaningfully create and endorse a small set of two-person games to represent their subjective perceptions of outcome interdependence in both simulated (Halevy, Chou, & Murnighan, 2012) and real-world conflicts and negotiations (Halevy, Sagiv, Roccas, & Bornstein, 2006; Halevy et al., 2011). These “perceptual gestalts”, labeled conflict templates, capture a holistic view of the action-outcome contingencies in bilateral conflicts (Halevy & Katz, 2013). The current research decomposes these game representations, breaking them into smaller meaningful components, to explore the proximate cognitive causes of individuals’ conflict experiences. Thus, when exploring individuals’ belief structures, we focus on specific sets of associations between actions (i.e., strategy concepts) and consequences (i.e., outcome consequences).

The negotiation literature points to two components of conflict situations that carry particular psychological significance and serve as reference points for individuals in conflict. Negotiators often focus their attention either on their aspiration (or target)—the best outcome that they ideally would like to get—or their reservation price (or resistance point)—the worst outcome that they wish to avoid (Thompson, 1990). For example, research shows that negotiators who focus on their aspiration achieve economic outcomes that are superior to those achieved by negotiators who focus on their reservation price. However, because focusing on their aspiration leads negotiators to anchor their expectations high, they tend to be less satisfied with their objectively superior outcomes than negotiators who anchor their expectations low by focusing on their reservation price (Galinsky, Mussweiler, & Medvec, 2002). These findings highlight the psychological significance of people’s best and worst outcomes in conflict situations. Accordingly, the current research focuses on the strategies that individuals associate

with attaining their best outcome in conflict (henceforth “best strategy”) and the strategies they associate with attaining their worst outcome in conflict (henceforth “worst strategy”).

Prototypical two-person games include four possible combinations of strategic choices: mutual cooperation, unilateral cooperation, unilateral competition, and mutual competition. Therefore, individuals could, in theory, associate attaining either their best outcome or their worst outcome with any of the four combinations of strategic choices. However, previous research suggests that individuals strongly prefer counterpart cooperation to counterpart competition, as indicated by their willingness to pay a personal cost to punish uncooperative behavior (Fehr & Gächter, 2000; 2002). In addition, when asked to represent their perceptions of outcome interdependence in matrix form, over 70% of participants associated the best outcome either with mutual cooperation or with unilateral competition (both of which assume counterpart cooperation) and their worst outcome either with unilateral cooperation or with mutual competition (both of which assume counterpart competition; Halevy et al., 2012). Thus, the strong preference for counterpart cooperation over counterpart competition constrains the set of viable associations in individuals’ mental models of conflict. Specifically, when thinking about their best strategy, most people think either about collaborating with or dominating a cooperative counterpart, and when thinking about their worst strategy, most people think either about yielding to or clashing with a competitive counterpart.

Consistent with this social-cognitive framework, Figure 1 illustrates a simplified associative network linking the various strategy concepts to outcome concepts. In the particular example illustrated in Figure 1, the individual’s mental model consists of strong associations (marked by the thick lines) between “unilateral competition” and “best outcome” as well as between “unilateral cooperation” and “worst outcome”. The remaining associations in this

simplified mental model are relatively weaker (marked by the thin lines). Readers who are familiar with game-theoretic approaches to conflict will recognize that the strong associations depicted in Figure 1 correspond to the game of Prisoner's Dilemma, in which the best individual outcome is achieved through unilateral competition and the worst individual outcome results from unilateral cooperation.

Measuring Mental Models of Conflict

To measure individuals' belief structures, we created a straightforward two-item instrument, which we use throughout the studies reported in this paper. Consistent with the view that some associations are relatively stronger than others, the items are forced-choice and require individuals to indicate which of the two viable strategies (mutual cooperation or unilateral competition) they associate more strongly with attaining their best outcome, and which of the two viable strategies (unilateral cooperation or mutual competition) they associate more strongly with attaining their worst outcome.¹ This two-item measure reads as follows:

When I am in conflict with someone else, the BEST outcome for me occurs when:

- (a) I behave competitively and they behave cooperatively.*
- (b) We both behave cooperatively.*

When I am in conflict with someone else, the WORST outcome for me occurs when:

- (a) I behave cooperatively and they behave competitively.*
- (b) We both behave competitively.*

The first item taps into people's beliefs about how to achieve their aspiration in conflict settings. People who endorse the first response (a) in this item believe that dominating others results in the best outcome in conflict, whereas those who endorse the second response (b) believe that collaborating with others results in the best outcome in conflict. The second item

taps into people's beliefs about avoiding their reservation price or resistance point in conflict. People who endorse the first response (a) believe that yielding to others results in the worst outcome in conflict, whereas those who endorse the second response (b) believe that clashing with others results in the worst outcome in conflict.

Best and Worst Strategy Beliefs

Decision makers tend to simplify their decision problems. They often do not weigh all the relevant preferences, overlook certain alternatives, fail to consider all the consequences of their actions, and ignore readily available information when making decisions (Chugh & Bazerman, 2007; March, 1994). This observation also holds in conflict situations, where individuals tend to focus their attention on pivotal aspects of the choice problem rather than weigh all aspects equally. Recent evidence coming from eye-tracking research and other process-tracing paradigms suggests that individuals pay more attention to the best outcome than to the worst outcome in interdependent decision-making tasks – individuals fixate their gaze longer on the best outcome relative to the worst outcome and ask more questions about the best outcome of the game than about the worst outcome of the game when interacting with others (Halevy & Chou, 2013; Hristova & Grinberg, 2005). These process-tracing findings are consistent with the view that information search and acquisition in interdependence situations tends to be goal-directed (De Dreu & Boles, 1998; De Dreu & Carnevale, 2003; De Dreu, Nijstad, & Van Knippenberg, 2008).

In light of these prior findings, we predict that best strategy beliefs will emerge as more psychologically prominent than worst strategy beliefs. Accordingly, individuals' social interactions and experiences of conflict should be influenced more by their beliefs about best strategy than about worst strategy. Specifically, we propose that people who believe that

unilateral competition results in the best outcome in conflict will experience more conflict and mistreatment in their interactions with others relative to those who believe that mutual cooperation results in the best outcome in conflict. We note that our hypothesis that best strategy beliefs will be more influential than worst strategy beliefs in some ways counters the idea that negative information is often more impactful than equivalent positive information (e.g., losses loom larger than corresponding gains; Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Kahneman & Tversky, 1979; Rozin & Royzman, 2001). Nonetheless, consistent with the aforementioned evidence, we postulate that individuals' thinking about interdependence situations tends to be colored more by their ambitions and goals rather than their fears and reservations.

Mental Models as a Function of Personality and Conflict Experiences

We propose that mental models are shaped by people's personalities as well as their life experiences. In regards to personality, we expect that best strategy beliefs will be related to individual differences that reflect other-regarding versus self-serving interpersonal orientations. Thus, we expected that best strategy beliefs would be associated with a prosocial rather than competitive social value orientation (SVO; Murphy, Ackermann, & Handgraaf, 2011; Van Lange, Otten, De Bruin, & Joireman, 1997), and with traits indicative of moral character (Cohen et al., 2013), such as Honesty-Humility (Ashton & Lee, 2007). Honesty-Humility is defined as the "tendency to be fair and genuine in dealing with others, in the sense of cooperating with others even when one might exploit them without suffering retaliation" (Ashton & Lee, 2007, p. 156). Given this definition, with its focus on exploitation of others (to presumably obtain best outcomes), we predicted that best strategy beliefs would correlate strongly with Honesty-Humility. We note that in the HEXACO model of personality (Ashton & Lee, 2007),

Agreeableness is indicative of a person's forgivingness and tolerance of exploitation (Ashton & Lee, 2007), rather than their unwillingness to exploit others. Accordingly, Agreeableness should be more weakly associated with best strategy beliefs as compared to Honesty-Humility, especially when using the HEXACO inventory (Ashton & Lee, 2009) to measure personality rather than a Big Five inventory.

In regards to conflict experiences, we propose that changes in individuals' experiences of conflict and mistreatment by others will result in concordant changes to their mental models. We propose a reciprocal relationship such that mental models influence conflict experiences, and conflict experiences influence mental models. Two complementary processes potentially account for this reciprocal relationship. First, because mental models guide individual behavior (Kreps, 1990; Devetag & Warglien, 2008; Halevy et al., 2012), a competitive mental model may give rise to competitive behaviors that incite antagonistic interactions with others. Likewise, a cooperative mental model, such as beliefs about collaborating with others, may give rise to cooperative behaviors that stimulate amicable interactions. Second, because individuals update their schemas and beliefs as they learn from experience (Roth & Erev, 1995; Erev & Roth, 1998), their experiences of conflict in their everyday lives, such as at their jobs, may result in corresponding changes to their associative network, leading to revised mental models. These two complementary processes likely reinforce each other, resulting in predictable associations between mental models of conflict and patterns of social relations. We investigate this aspect of the research longitudinally in Study 4, exploring both how conflict leads to social interactions characterized by competitiveness rather than cooperativeness and how experiences of conflict and mistreatment lead to changes in mental models.

Study 1

Study 1 investigated the relationships between best and worst strategy beliefs and individual differences in social value orientation and the Big Five personality dimensions.

Method

Sample and Procedure

We recruited 417 adult participants from a paid, online participant pool maintained by Stanford University's Graduate School of Business (57% female; Age: $M = 34.4$, $SD = 10.4$; 74% Caucasian; 14.8% Asian-American; 4.9% Hispanic; 3.6% African-American; 2.7% other; 74% employed full-time or part-time; 4.8% students; 1.4% self-employed; 19.8% other). Participants accessed and completed all the measures online. Due to missing data our analyses are based on 413 respondents with complete data.

Measures

Best and Worst Strategy. We used the two-item, forced choice measure introduced earlier to assess participants' beliefs about the combination of strategies that results in the best and the worst outcomes of conflict. For the best strategy item, mutual cooperation was coded as 1 and unilateral competition coded as 0 ($M = 0.84$, $SD = 0.37$). For the worst strategy item, mutual competition coded as 1 and unilateral cooperation coded as 0 ($M = 0.47$, $SD = 0.50$).

Social Value Orientation. We assessed participants' social value orientation (SVO) – the degree to which their resource allocation preferences are competitive, individualistic, prosocial, or altruistic – with the six-item slider measure introduced by Murphy et al. (2011). In each item, participants indicated how they would like to distribute a hypothetical pool of resources between themselves and another person. The items result in ratio scores that indicate how much a respondent wishes to benefit oneself versus another person. Higher scores on this continuous measure indicate greater concern for the other relative to the self (i.e., the lowest

range of scores represents a competitive orientation, the next range of scores represents an individualistic orientation, followed by prosocial and altruistic orientations; cf. Van Lange et al., 1997, for a categorical measure of SVO).

Personality Traits. We employed the Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003) to measure the Big Five factors. This measure assesses individual differences in traits along the Big Five personality dimensions of Agreeableness, Conscientiousness, Neuroticism, Extroversion, and Openness to Experience (2 items per dimension). Participants indicated how much each trait characterized them on a five-point scale (1 = *strongly disagree*, 5 = *strongly agree*). Previous research has established that the TIPI has satisfactory test-retest reliability (mean $r = .72$ after 6 weeks in Gosling et al., 2003, p. 518), which is a better indicator of reliability than is Cronbach's alpha (McCrae, Kurtz, Yamagata, & Terracciano, 2011). Because each dimension was assessed with only two items, Cronbach's α coefficients for the five dimensions are lower than typically found for longer multi-item scales (see Table 1).

Results and Discussion

Table 1 presents the correlations between the research variables. As Table 1 shows, believing that mutual cooperation facilitates attaining one's best outcome in conflict correlated positively with a prosocial value orientation, Agreeableness, Openness to Experience and Conscientiousness, and negatively with Neuroticism. As predicted, collaborative best strategy beliefs correlated positively with a prosocial value orientation. The Big Five correlations were small, indicating that best strategy beliefs, which narrowly focus on conflict situations, are both theoretically distinct and empirically distinguishable from broad personality factors. Worst

strategy was uncorrelated with all the individual differences, providing initial evidence that best strategy beliefs may be a better predictor than worst strategy beliefs of interpersonal orientations.

Study 2

Study 2 explored how best and worst strategy beliefs relate to employees' experiences of task and relationship conflict at work. Task conflict in work settings captures disagreements about ideas related to the task at hand; relationship conflict captures emotional friction and discord related to group members' characteristics (Jehn, 1995). Research has shown that relationship conflict has unequivocal negative effects; the effects of task conflict are more complex, and tend to be moderated by a number of variables, including the association between task and relationship conflict (which tends to be strong and positive; De Dreu & Weingart, 2003; De Wit, Greer, & Jehn, 2012). Study 2 tested the hypothesis that best and worst strategy beliefs are differentially related to individuals' experiences of conflict.

Method

Participants and Procedure

We recruited 1,071 participants from a nationwide, paid online subject pool maintained by a private survey company to complete an online survey about "conflict perceptions" (51.3% female; 42.8% male; 6% not reported; age: $M = 43.1$ years, $SD = 17.3$). All of the participants were adult U.S. citizens who were employed full-time at the time of their participation. The ethnic composition of our sample was 72.5% Caucasian, 12.7% African-American, 6% Hispanic, 4.7% Asian-American, and 4.1% "other". This ethnic composition closely matches U.S. census data (as of 2010; see <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>) and was obtained using quota sampling within ethnic groups. Most of our respondents were college graduates (37.3%) or had post-graduate degrees (15.4%). The remaining participants either had

some college education (26.5%); were high school graduates (14.6%); had some high-school education (0.3%) or they did not report their education (5.9%). Work experience varied considerably, from one month to over fifty years. Finally, the respondents represented a large number of occupations, organizations, and industries. The most frequent industry sectors included: education (11.1%); healthcare (10.3%); manufacturing (9.4%); service (8.3%); sales (8.1%); and technology (6.9%). Participants in this survey responded to various questionnaires related to several different questions of interest. Due to missing data our analyses are based on 1,021 respondents with complete data.

Measures

Participants responded to a battery of measures.² Relevant to the present investigation, the survey included the assessment of mental models as well as measures of task and relationship conflict.

Best and Worst Strategy. To assess best and worst strategy beliefs we used the same measure employed in Study 1.

Task and Relationship Conflict. Task and relationship conflicts within one's work-unit were each assessed with four items developed by Jehn (1995). Sample items include: "How frequently are there conflicts about ideas in your group?" (task conflict); and "How much friction is there among members in your group?" (relationship conflict). Responses were made on 5-point rating scales ranging from 1 = *none* to 5 = *a lot*. Cronbach's α coefficients for the two scales were .90 and .93, respectively.

Results and Discussion

Table 2 presents the correlations for the 1,021 participants with complete data. As Table 2 shows, the pattern of correlations supports our hypothesis: collaborative best strategy beliefs

correlated negatively with employees' experiences of task and relationship conflict at work, whereas worst strategy beliefs were not associated with the amount of conflict individuals experienced at work. The same pattern of results emerged when we regressed each type of conflict on best and worst strategy simultaneously: Best strategy was a significant predictor ($\beta_{\text{task}} = -.29$, $\beta_{\text{relationship}} = -.28$, $ps < .001$), whereas worst strategy was not ($\beta_{\text{task}} = -.02$, $\beta_{\text{relationship}} = -.03$, $ps > .35$). These results extend Study 1's findings by showing that best strategy relates more strongly not only to social motives and personality traits, but also to employees' experiences of conflict at work. They are consistent with previous research findings according to which individuals using a dominating conflict management style at work experience higher levels of task and relationship conflicts (Friedman, Tidd, Currall, & Tsai, 2000).

Study 3

Study 3 was designed to replicate and extend the findings of Studies 1 and 2 using a different conceptual model of personality variation than Study 1's. Unlike the Big-Five model, the HEXACO model (Ashton & Lee, 2007; 2009) summarizes personality variation in terms of six broad factors. The Honesty-Humility dimension (which is not included in the Big Five model employed in Study 1) captures the extent to which individuals are sincere and modest versus greedy and pretentious. Emotionality captures the extent to which individuals are sensitive and anxious versus tough and stable. Extraversion captures the extent to which individuals are sociable and active versus reserved and withdrawn. Agreeableness captures the extent to which individuals are peaceful and tolerant versus ill-tempered and quarrelsome. Conscientiousness captures the extent to which individuals are organized and thorough versus sloppy and lazy. Openness to Experience captures the extent to which individuals are intellectual and innovative versus conventional and unimaginative. We expected the Honesty-Humility dimension to

correlate positively with collaborative best strategy beliefs given that it captures a disposition to forgo exploitation of others. We also expected mental models to explain variance in employees' experiences of workplace conflict above and beyond the six HEXACO dimensions.

Method

Participants and Procedure

We recruited 1,597 participants from the same nationwide, paid online subject pool as in Study 2 to complete a 15-minute online survey about “conflict perceptions”. All the participants were adult U.S. citizens who were employed full-time at the time of their participation (37.9% female; 31.1% male; 31.1% not reported; age: $M = 43.3$ years, $SD = 13.1$). The ethnic composition of our sample was 74.8% Caucasian, 12.0% African-American, 5.9% Hispanic, 3.6% Asian-American, and 3.7% “other”. As in Study 2, this ethnic composition also closely matches U.S. census data as of 2010 and was obtained using quota sampling within ethnic groups. Approximately one third of our respondents had college degrees (23.5%) or post-graduate degrees (9.6%). The remaining respondents had some college education (22.4%), were high-school graduates (12.5%) or had some high-school education (0.8%). The remaining participants did not report their education (31.1%). Work experience varied considerably, from less than a year to over fifty years. Finally, the respondents represented a large number of occupations, organizations, and industries. The most frequent industry sectors included: healthcare (9.3%); education (7.0%); service (6.9%); manufacturing (6.1%); sales (4.8%); and technology (4.6%).

Measures

As in Study 2, participants responded to a battery of measures.² Relevant to the present investigation, the survey included the assessment of mental models, the measures of task and relationship conflict, as well as a measure of the six HEXACO dimensions.

Best and Worst Strategy Beliefs. We assessed mental models of conflict using the same measure employed in Studies 1 and 2. Both items appeared on the same screen as before; unlike Studies 1 and 2, the order of the two items was counterbalanced in Study 3: 713 participants responded to the aspirations item first; 717 participants responded to the reservations item first.

Task and Relationship Conflicts. We assessed task and relationship conflicts within one's work-unit using the same scales employed in Study 2. Cronbach's α coefficients were .89 (task conflict) and .92 (relationship conflict).

Personality Traits. We assessed the six broad dimensions of personality with the 60-item HEXACO Personality Inventory (Ashton & Lee, 2009). Responses to the 60 HEXACO items were made on 5-point scales ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Cronbach's α coefficients for the six HEXACO dimensions were .73, .73, .78, .73, .79, and .77, respectively.

Due to missing data, our results concerning best and worst strategy, task and relationship conflicts, and personality traits, are based on 1,430, 1,399, and 1,236 responses respectively. These numbers reflect the order in which these constructs were assessed in our survey; people who voluntarily dropped out during the survey did not complete latter sections of the survey.

Results and Discussion

Table 3 presents the correlations among Study 3's variables. Replicating Study 2's results, collaborative best strategy beliefs correlated negatively with experiences of task and relationship conflict at work. In addition, collaborative best strategy beliefs correlated positively with Honesty-Humility. Surprisingly they also correlated just as highly with Conscientiousness.

The correlations with the other dimensions, while significant, were weaker than the Honesty-Humility and Conscientiousness correlations. Worst strategy beliefs correlated significantly, though weakly, with Honesty-Humility and employees' experiences of task and relationship conflict, and to a lesser extent also with Extraversion, Conscientiousness, and Agreeableness.

Table 4 reports the results of hierarchical regression analyses predicting task and relationship conflict. Model 1 used employees' personality traits to predict task and relationship conflict; Model 2 added best and worst strategy beliefs. As Model 2 shows, best and worst strategy beliefs explain unique variance in experiences of workplace conflict above and beyond the variance explained by broad dimensions of personality.

Study 4

Study 4 extended our investigation by exploring the relationships between mental models and experiences of conflict in organizational settings longitudinally, using weekly diaries that employees completed over a period of three months. By assessing mental models of conflict both before and after the measurement of conflict experiences, Study 4 allowed us to test our predictions regarding the reciprocal effects of mental models on experiences of conflict and of experiences of conflict on mental models.

Study 4 extended our investigation beyond task and relationship conflict by assessing three other aspects of dysfunctional social relations in organizations: interpersonal hostility at work (Spector & Jex, 1998), which captures experiences of recurring disagreements and poor treatment at work; workplace ostracism, which captures experiences of social exclusion by peers at work (Ferris et al., 2008); and abusive supervision, which captures experiences of maltreatment and non-physical hostility from supervisors (Tepper, 2000).

As in Study 3, Study 4 included the HEXACO inventory to control for the six major dimensions of personality when predicting organizational mistreatment and Time 2 mental models. It also controlled for a host of personal (e.g., age, income, education) and organizational variables (e.g., size, sector, and presence of an organizational ethics code).

Method

Participants and Procedure

Data for Study 4 were taken from the Workplace Experiences and Character Traits (WECT) project—a three-month weekly online diary study of employed adults across the United States (see www.WECTProject.org for complete details about the design of this study).³

Participants were 494 full-time U.S. employees from different organizations recruited from a nationwide, paid online subject pool (52.6% female; age: $M = 41.08$, $SD = 11.46$; 72.9% Caucasian, 11.1% African-American, 5.3% Hispanic, 3.2% Asian-American, 7.5% other or multi-racial). Approximately half of the sample had less education than a four-year college degree (51.2%), and the remainder had four-year college degrees or more education (48.8%).

Work experience varied considerably, from less than one month to 39 years. Participants worked in diverse occupations, in private for-profit companies (65.6%), not-for-profit organizations (10.7%), the government (14.2%), and some were self-employed (9.5%).

Participants completed an initial battery of measures assessing their personality and work environment. The initial battery took approximately 75 minutes to complete (participants could take breaks at any time) and contained a number of different questionnaires. Relevant to the present investigation, the initial battery included the assessment of mental models as well as the HEXACO-60 inventory (Ashton & Lee, 2009). After the initial survey, participants were sent subsequent survey invitations each week for 12 weeks. The weekly surveys, which were

approximately 30 minutes long, asked participants about their experiences at work over the previous seven days. Relevant to the present investigation, the weekly surveys included assessments of interpersonal hostility at work (Spector & Jex, 1998), workplace ostracism (Ferris et al., 2008), and abusive supervision (Tepper, 2000). The measure of mental models was administered a second time in a final survey one week after the twelfth weekly survey. The final survey contained many of the same measures as the initial survey. In all the surveys, the order of the measures and the order of the items within each measure were randomized for each participant.

It was possible for participants to miss a survey one week, but complete a survey the following week. As such, actual sample sizes varied each week due to some participants failing to complete the weekly survey, or particular items in the survey, or indicating that certain questions were not applicable. Of the 494 participants that completed the initial battery, 330 participants (66.80%) completed six or more of the twelve weekly reports. For the weekly surveys, the highest response rate was in the first week (week 1 $N = 380$) and the lowest response rate was in the last (week 12 $N = 258$).

Measures

Best and Worst Strategy. Mental models were assessed twice, as part of the initial battery and as part of the final survey. We used the same two items employed in our previous investigations. Time 1 best strategy ($M = 0.86$, $SD = 0.35$); Time 2 best strategy ($M = 0.85$, $SD = 0.36$). Time 1 worst strategy ($M = 0.49$, $SD = 0.50$); Time 2 worst strategy ($M = 0.51$, $SD = 0.50$).

Personality Traits. The six HEXACO personality factors were assessed in the initial battery with the same measure used in Study 3, the HEXACO-60 inventory (Ashton & Lee,

2009). Responses to the 60 HEXACO items were made on 5-point scales ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Cronbach's α reliabilities for the six HEXACO dimensions were .72, .72, .84, .80, .81, and .79, respectively.

Interpersonal hostility at work. Interpersonal hostility was assessed each week using the four-item Interpersonal Conflict at Work Scale (ICAWS) developed by Spector and Jex (1998). Participants reported how often during the past week at work others argued with them, were rude to them, did nasty things to them, and yelled at them. Responses were made on a 5-point rating scale (0 = *never*, 1 = *rarely*, 2 = *sometimes*, 3 = *quite often*, 4 = *very often*). Responses to the four items were averaged. This measure had high internal consistency in each week of the study ($\alpha > .86$).

Workplace ostracism. Workplace ostracism was assessed each week using the 10-item Workplace Ostracism Scale (WOS) developed by Ferris et al. (2008). Participants reported how often during the past week others ostracized them (e.g., treated them as if they weren't there, refused to talk to them, avoided them, ignored them, etc.). Responses were made on a 7-point rating scale (0 = *never*, 1 = *once in a while*, 2 = *sometimes*, 3 = *fairly often*, 4 = *often*, 5 = *constantly*, 6 = *always*). Responses to the ten items were averaged. This measure had high internal consistency in each week of the study ($\alpha > .97$).

Abusive supervision. Abusive supervision was assessed each week using the 15-item Abusive Supervision scale developed by Tepper (2000). Participants reported how often during the past week at work they were treated poorly by their supervisor (e.g., how often their boss ridiculed them, told them their thoughts or feelings were stupid, put them down in front of others, made negative comments about them in front of others, etc.). Responses to the 15 items were made on a 5-point scale (0 = *not at all*, 1 = *very seldom*, 2 = *occasionally*, 3 = *moderately*

often, 4 = *very often*). A “not applicable” response was also included, and treated as missing data. Responses to the 15 items were averaged. This measure had high internal consistency in each week of the study ($\alpha > .96$).

Data Analysis

We collected 12 weekly assessments of the organizational mistreatment variables. Thus, the weekly observations of organizational mistreatment were nested within persons. To account for this nesting, we analyzed these variables with multilevel models computed with the HLM 7 software (Raudenbush, Bryk, & Congdon, 1996-2011), using an Overdispersed Poisson distribution and robust standard errors. An Overdispersed Poisson distribution was used because the organizational mistreatment variables resemble count variables in that they are not normally distributed and they have large variances. We controlled for time in the study by including week number as a level 1 fixed effect (0 = *first weekly survey*, 11 = *twelfth weekly survey*). All continuous variables were grand-mean centered. The model included a random intercept parameter (level 1 random effect) to account for the nesting of observations within persons. We examined the significance and direction of each of the effects by looking at the *t*-ratios and *p*-values associated with the unstandardized regression coefficients (*B*s).

Results

From Time 1 Mental Models to Experiences of Conflict

As shown in Table 5, collaborative best strategy beliefs correlated positively with Honesty-Humility and Conscientiousness, and to some degree also with Extraversion, Agreeableness, and Openness to Experience. Importantly, they correlated negatively with average levels of interpersonal hostility ($r = -.38$), workplace ostracism ($r = -.45$) and abusive supervision ($r = -.39$) across the three month period. Figure 2 graphically depicts the mean level

of interpersonal hostility, workplace ostracism, and abusive supervision in each of the 12 weeks as a function of beliefs about best strategy. As shown in Tables 6 through 8, best strategy beliefs remained a significant predictor of experiences of organizational conflict and mistreatment even after controlling for the six HEXACO dimensions and a large number of demographic and organizational control variables, and when accounting for the nested nature of the data.

From Experiences of Conflict to Time 2 Mental Models

Tables 9 and 10 present the results of logistic regression analyses predicting Time 2 best and worst strategy using Time 1 best and worst strategy, the HEXACO personality dimensions, demographic and organizational control variables, and the average level of organizational mistreatment over 12 weeks. Average organizational mistreatment was computed by first averaging the ratings of hostility, ostracism, and abusive supervision respectively, across the twelve weekly assessments. Then, because the three mistreatment variables were so highly correlated ($r_s > .82, p < .001$), we standardized each of the three variables and averaged them to create the composite index of organizational mistreatment that we used in the logistic regression analyses of Time 2 best and worst strategy.

As shown in Table 9, Time 2 best strategy was predicted by Honesty-Humility and experiences of organizational mistreatment, as well one of the ethics code dummy variables. Controlling for the respondents' initial mental models, those with greater Honesty-Humility developed more collaborative mental models over time, and those who experienced more organizational mistreatment and those who did not know if their organization had an ethics code developed more competitive mental models over time.

Time 1 best strategy was a significant predictor of Time 2 best strategy when organizational mistreatment was not included in the model ($B = 1.40, SE = .60, p = .02, Odds$

ratio = 4.07). However, as shown in Table 9, the Time 1 best strategy variable was non-significant when experiences of organizational mistreatment were included in the model. Given this pattern, we tested for the possibility of an indirect effect of Time 1 best strategy, through experiences of organizational mistreatment, on Time 2 best strategy. Preacher and Hayes (2008) bias-corrected bootstrapping procedure revealed a significant indirect effect of Time 1 best strategy on Time 2 best strategy via experiences of organizational mistreatment when the demographic and organizational controls and HEXACO variables were not included in the model (95% bias-corrected confidence interval = 0.39 to 1.59), as well as when the demographic and organizational control variables were included in the model but the HEXACO variables were not (95% bias-corrected confidence interval = 0.01 to 1.39). The indirect effect was non-significant, however, when the HEXACO variables were included in the model along with the demographic and organizational controls (95% bias-corrected confidence interval = -0.13 to 1.21).

Consistent with our hypotheses and previous results concerning the lack of a consistent relationship between worst strategy and measures of organizational conflict and mistreatment, Table 10 demonstrates that Time 1 worst strategy predicted Time 2 worst strategy (as did income and tenure), whereas experiences of organizational mistreatment did not.

Discussion

Study 4 extended our findings in two important ways. First, it demonstrated that best strategy beliefs predict three forms of organizational mistreatment experiences longitudinally. Figure 2 shows that individuals who believe that unilateral competition allows them to attain their best outcomes in conflict experience significantly more interpersonal hostility, workplace ostracism, and abusive supervision on a weekly basis as compared with individuals who believe that mutual cooperation allows them to attain their best outcomes in conflict. Second, Study 4

demonstrated the reciprocal effects of mental models on conflict experiences in that Time 1 best strategy beliefs predicted experiences of organizational mistreatment, which in turn predicted Time 2 best strategy beliefs. Specifically, employees whose best strategy was unilateral competition subsequently reported more frequent experiences of interpersonal hostility, ostracism, and abusive supervision at their jobs over the course of three months, and these experiences of hostility, ostracism, and abusive supervision were associated with competitive best strategy beliefs later, controlling for these employees' initial mental models of conflict.

Study 5

Although Studies 2 through 4 provide an insight into the (cross-sectional and longitudinal) relationships between mental models of conflict and real-world experiences of conflict, their correlational nature precludes the possibility of identifying a causal effect of individuals' associative network on their social interactions and relationships. Study 5 was designed to provide such evidence, by experimentally manipulating the mental models of a hypothetical coworker and assessing expectations and behavioral intentions related to interactions with that coworker.

Study 5 had three main goals. First, we sought to provide evidence of a causal effect of individuals' mental models on others' reactions to them. Second, it was designed to provide yet another test of our hypothesis that best strategy beliefs shape social interactions and relationships more than worst strategy beliefs. Finally, we explored why people might mistreat individuals who believe that unilateral competition is the best strategy in conflict. Specifically, we tested whether individuals whose best strategy is unilateral competition are ostracized and treated with hostility because they are seen as self-interested, because they are seen as aggressive, or both.

Method

Participants and Procedure

We recruited from Amazon's Mechanical-Turk 202 adults (48% female, age: $M = 30.8$, $SD = 10.4$; 99.5% U.S. citizens; Ethnicity: 71% Caucasian, 16% Asian-American, 6.5% African-American, 4% Hispanic, and 2.5% other) to participate in an online study on conflict perceptions. Participation lasted less than 10 minutes and participants received \$1 for their time.

Design, Materials, and Measures

Participants read a short paragraph about a hypothetical employee (henceforth labeled the target). Embedded in that paragraph was our manipulation of the target's mental model.

Participants were randomly assigned to one of four conditions. Consistent with our two-item, forced-choice measure of mental models used in Studies 1-4, in the first condition, the target was described as believing that mutual cooperation results in the best outcome in conflict situations; in the second condition, the target was described as believing that unilateral competition results in the best outcome in conflict situations; in the third condition, the target was described as believing that mutual competition results in the worst outcome in conflict; finally, in the fourth condition, the target was described as believing that unilateral cooperation results in the worst outcome in conflict. Thus, we essentially transformed the self-report measure of mental models employed in our correlational studies into descriptions of the mental model of a hypothetical coworker.

After reading the target description, participants were asked to indicate how likely they would be to experience relationship conflict, be interpersonally hostile, and ostracize the target, if the target were their coworker. Expectations of relationship conflict with the target were assessed using the same four-item measure employed in Study 2 (Jehn, 1995; Cronbach's $\alpha = .93$). Intended interpersonal hostility was assessed using the same 4-item measure employed in

Study 4 (Spector & Jex, 1998; Cronbach's $\alpha = .91$).⁴ Intentions to ostracize were assessed using three of the ten items employed in Study 3 ("avoid", "ignore", and "minimize contact"; Ferris et al., 2008; Cronbach's $\alpha = .98$). All the responses were made on 5-point scales ranging from 1 = *very unlikely* to 5 = *very likely*.

To explore the extent to which attributions of self-interest and/or aggressiveness mediated the effect of mental models on expectations and behavioral intentions, participants also indicated the extent to which they perceived the target to be "self-interested" and "aggressive" using 5-point scales ranging from 1 = *strongly disagree* to 5 = *strongly agree*.

Results

Table 11 depicts the means and standard deviations for expectations of relationship conflict, interpersonal hostility, and ostracism toward each of the four targets. A one-way MANOVA of relationship conflict, interpersonal hostility, and ostracism, that treated the mental model of the target as a four-level between-subjects factor, found a significant effect of target's mental model on expectations of relationship conflict, $F(3,197) = 54.58, p < .001$, intended interpersonal hostility, $F(3,197) = 38.51, p < .001$, and intentions to ostracize, $F(3,197) = 50.64, p < .001$. Consistent with the findings of our correlational studies, best strategy beliefs produced significantly different reactions to the targets. Participants indicated they would be more likely to mistreat the target whose best strategy was unilateral competition than the target whose best strategy was mutual cooperation. Worst strategy beliefs did not significantly influence participants' reactions to the targets.

As Table 11 shows, targets whose best strategy was unilateral competition were rated as significantly more self-interested and aggressive than targets whose best strategy was mutual cooperation. Judgments of self-interest correlated positively with judgments of aggressiveness, r

(202) = .64, $p < .001$. Preacher and Hayes (2008) bias-corrected bootstrapping procedure revealed significant simultaneous indirect effects of best strategy of the target on expectations of relationship conflict with the target, intended interpersonal hostility toward the target and intentions to ostracize the target via both perceptions of self-interest and perceptions of aggressiveness of the target. The 95% confidence intervals did not include zero for either expectations of relationship conflict (CI_{perceived self-interest}: -.10 to -.02, CI_{perceived aggression}: -.20 to -.04), intended interpersonal hostility (CI_{perceived self-interest}: -.07 to -.01, CI_{perceived aggression}: -.14 to -.03) or intentions to ostracize (CI_{perceived self-interest}: -.19 to -.03, CI_{perceived aggression}: -.20 to -.03). These findings indicate that one way in which best strategy shapes social interactions is indirectly, by shaping attributions of self-interest and aggressiveness in social targets.

Discussion

Study 5's findings provide evidence of causal effects of targets' best strategy on the expectations and behavioral intentions of potential interaction partners. They also lend further support to our hypothesis that best strategy beliefs shape social interactions and relationships more than worst strategy beliefs. Finally, Study 5 found that targets' best strategy shaped observers' judgments of their self-interestedness and aggressiveness, which in turn, shaped expectations of relationship conflict, intended interpersonal hostility and intentions to ostracize. These findings add to the results of Studies 1 to 4 by explaining why people whose best strategy is unilateral competition experience more conflict and friction in the workplace—they are seen as more selfish and aggressive than those whose best strategy is mutual cooperation.

General Discussion

Five studies documented theoretically meaningful relationships between individuals' mental models of conflict, their personality, and their social interactions at work.

Conceptualizing mental models of conflict as associative networks linking strategy concepts to outcome concepts, we focused on the actions that individuals associate with attaining their best and their worst outcomes in conflict. The current research has two main findings. First we show that best strategy is a more proximate cause of individuals' social interactions than worst strategy; the longitudinal evidence in Study 4 and the experimental evidence in Study 5 provide particularly compelling evidence for that claim. The finding that best strategy is more strongly and reliably linked to individuals' personality and real-world conflict experiences is consistent with research showing that, when individuals think about their interdependence, the best outcome is more psychologically prominent than the worst outcome (Halevy & Chou, 2013). Second, this research documented the reciprocal relationship between best strategy beliefs and individuals' conflict experiences. Specifically, Study 4 showed that best strategy beliefs assessed at Time 1 predicted experiences of interpersonal hostility, workplace ostracism, and abusive supervision as long as twelve weeks after its assessment. These conflict experiences, in turn, shaped individuals best strategy beliefs at Time 2. Hence, the current research provides evidence for the malleability of these mental models, even though they are associated with stable individual differences in the Honesty-Humility dimension of personality. Future research may investigate how personality and ongoing conflict experiences interact in shaping individuals' mental models.

Another interesting finding that emerged consistently across our different studies was that only a small portion (under 20%) of the individuals in the four correlational studies indicated that they believed that unilateral competition is better than mutual cooperation as a way of attaining one's best outcome in conflict. Although these best strategy beliefs are not widespread (thankfully, as they are associated with a host of negative processes), they are highly predictive

of social relations in organizational settings. Because best strategy beliefs are responsive to individuals' conflict experiences, organizations may try to decrease the proportion of individuals who subscribe to these socially dysfunctional beliefs by influencing employees' social environment (i.e., through socialization), minimize hiring of individuals with socially dysfunctional mental models (i.e., through selection), or both.

Our five studies used a variety of methods and surveyed thousands of employees across the U.S., which ensures that the observed associations are robust. The fact that the responses to a single, forced-choice item explained unique variance in real-world experiences of organizational friction over time (correlating $-.38$, $-.45$ and $-.39$ with reports of interpersonal hostility, workplace ostracism, and abusive supervision averaged across a three month period) attests to the power of our theoretical framework, which integrated social-cognitive (Anderson & Huesmann, 2003; De Dreu, 2010; Deutsch, 1973; Kelley & Thibaut, 1978; van Boven & Thompson, 2003), economic (i.e., game-theoretic: Camerer, 2003; Schelling, 1960), and organizational (De Dreu & Weingart, 2003; De Wit, Greer & Jehn, 2012) approaches to conflict. We hope that this theoretical integration will help build a bridge across several literatures that have so far remained separate. For example, although the concepts of interdependence, goal incompatibility, and strategic games play a pivotal role in theories and research on negotiation and other conflicts of interest (Bazerman et al., 2000; Bornstein, 2003; Camerer, 2003; Colman, 1995), they feature less prominently in research on task and relationship conflicts in organizations (De Dreu & Weingart, 2003; De Wit et al., 2011). In contrast, the real-world processes and outcome variables routinely investigated in organizational research (e.g., task and relationship conflicts, workplace ostracism, and abusive supervision) are notably missing from

game-theoretic and experimental social psychological research on conflict. The current research makes a case for the usefulness of integrating these diverse perspectives when studying conflict.

The current results demonstrate the critical role that subjective perceptions play in shaping social interactions and relationships in organizations, as well as the practical importance of studying mental models of conflict situations to understand employees' experiences at work. They extend previous research on conflict templates (Halevy et al., 2006; 2011; 2012) by taking a componential approach and identifying best strategy beliefs as a possible root of people's mental representations of outcome interdependence in conflict situations. Thus, our findings underscore the usefulness of focusing more narrowly on individuals' best strategy as a means of tapping the games they think they are playing when interacting with others, at work and elsewhere.

In closing, previous research on organizational conflict documented "positive and moderate correlations between conflict at work and anxiety and frustration, between conflict at work and physical complaints, and between conflict at work and the exhaustion dimension of burnout" (De Dreu, 2008; p. 13). Therefore, organizations and their members are motivated to reduce conflict at work and find constructive ways to manage and resolve disputes. Although relatively few employees believe that unilateral competition produces the best outcome in conflict, the negative impact of these employees can be disproportionately large (i.e., the "bad apple effect"). Our findings demonstrate the importance of identifying the cognitive antecedents of organizational conflict and mistreatment for promoting more harmonious interactions in the workplace.

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Notes

1. Our two item measure was created such that different combinations of responses to the items reflect perceptions that map on only one of the four archetypal mental models reported by Halevy et al. (2012): Prisoner's Dilemma, Chicken, Assurance (Stag-hunt) and Maximizing Difference.
2. Information about additional measures included in this survey is available from the authors.
3. Data from the WECT Project has been used in other manuscripts involving different research questions from those investigated here (Cohen, Panter, Turan, Morse, & Kim, in press, 2013). None of the analyses in Study 4 has been reported previously.
4. We replaced one of the four items – “do nasty things” with a more generic description “be hostile”.

Table 1. Correlations among best and worst strategy, social value orientation, and the Big Five personality dimensions (Study 1).

	<i>M(SD)</i>	1	2	3	4	5	6	7	8
1. Best Strategy=Mutual Cooperation	0.84 (0.37)	--							
2. Worst Strategy=Mutual Competition	0.47 (0.50)	.06	--						
3. Social value orientation	43.34 (.23)	.29**	-.03	--					
4. Agreeableness	3.73 (.78)	.20**	-.10	.17**	.38				
5. Conscientiousness	3.99 (.80)	.10*	-.09	.18**	.38**	.60			
6. Neuroticism	2.47 (.90)	-.14*	.00	-.10*	-.37**	-.32**	.64		
7. Extraversion	2.98 (.97)	.04	-.02	-.01	.12*	.06	-.22**	.67	
8. Openness to experience	3.63 (.83)	.16**	.01	.16**	-.25**	.23**	-.22**	.31**	.48

Note. $N = 413$. * $p < .05$ ** $p < .005$. Cronbach α reliability coefficients appear on the diagonal.

Table 2. Correlations among best and worst strategy and task and relationship conflict at work (Study 2).

	<i>M (SD)</i>	1	2	3	4
1. Best Strategy=Mutual Cooperation	0.81 (0.39)	--			
2. Worst Strategy=Mutual Competition	0.55 (0.50)	.10**	--		
3. Task conflict	2.69 (0.97)	-.29**	-.06	.90	
4. Relationship conflict	2.60 (1.07)	-.28**	-.05	.86**	.93

Note. $N = 1,021$. * $p < .05$ ** $p < .005$. Cronbach α reliability coefficients appear on the diagonal.

Table 3. Correlations among best and worst strategy, task and relationship conflict, and the HEXACO personality dimensions (Study 3).

	<i>M(SD)</i>	1	2	3	4	5	6	7	8	9	10
1. Best Strategy=Mutual Cooperation	0.87 (0.34)	--									
2. Worst Strategy=Mutual Competition	0.59 (0.49)	.08**	--								
3. Task conflict	2.63 (0.91)	-.20**	-.11**	.89							
4. Relationship conflict	2.53 (1.03)	-.21**	-.13**	.83**	.92						
5. Honesty-Humility	3.53 (0.66)	.25**	.15**	-.31**	-.31**	.73					
6. Emotionality	3.16 (0.61)	.05	.02	.04	.11**	-.02	.73				
7. Extraversion	3.36 (0.65)	.08*	.08*	.07*	-.15**	.11**	-.23**	.78			
8. Agreeableness	3.24 (0.59)	.08*	.06*	-.13**	-.18**	.37**	-.13**	.34**	.73		
9. Conscientiousness	3.69 (0.62)	.24**	.08*	-.25**	-.27**	.44**	-.07*	.36**	.22**	.79	
10. Openness to Experience	3.38 (0.69)	.10*	.02	-.05	-.08**	.09**	-.08*	.34**	.17**	.34**	.77

Note. Due to missing data, these analyses are based on samples ranging in size from $N = 1,430$ to $N = 1,236$.

* $p < .05$ ** $p < .005$. Cronbach α reliability coefficients appear on the diagonal.

Table 4. Regression of task and relationship conflict on the HEXACO personality dimensions and best and worst strategy beliefs (Study 3).

	Task conflict		Relationship conflict	
	Model 1	Model 2	Model 1	Model 2
1. Best Strategy=Mutual Cooperation		-.12**		-.12**
2. Worst Strategy=Mutual Competition		-.06*		-.10**
3. Honesty-Humility	-.24**	-.21**	-.23**	-.19**
4. Emotionality	.03	.04	.08	.09**
5. Extraversion	.02	.02	-.05	-.04
6. Agreeableness	-.01	-.01	-.04	-.04
7. Conscientiousness	-.16**	-.14**	-.15**	-.13**
8. Openness to Experience	.02	.02	.02	.02
Adjusted R^2	.11	.13	.13	.15
F value	26.45**	23.44**	31.15**	28.37**
F change		12.88**		17.52**

Note. Due to missing data, these analyses are based on samples ranging in size from $N = 1,236$ to $N = 1,597$. Coefficients represent standardized regression weights (β). * $p < .05$ ** $p < .005$

Table 5. Correlations among best and worst strategy, measures of organizational mistreatment, and HEXACO personality dimensions (Study 4).

	<i>M (SD)</i>	1	2	3	4	5	6	7	8	9	10	11
1. Best Strategy=	0.86 (0.35)	--										
Mutual Cooperation												
2. Worst Strategy=	0.49 (0.50)	.04	--									
Mutual Competition												
3. Interpersonal hostility	0.31 (0.57)	-.38**	-.06	≥.86								
4. Workplace ostracism	0.40 (0.90)	-.45**	-.07	.85**	≥.97							
5. Abusive supervision	4.54 (9.54)	-.39**	-.09	.83**	.82**	≥.96						
6. Honesty-Humility	3.51 (0.63)	.24**	.12*	-.23**	-.26**	-.21**	.72					
7. Emotionality	3.08 (0.61)	-.03	-.05	-.08	-.09	-.08	-.07	.72				
8. Extraversion	3.56 (0.70)	.11*	.05	-.19**	-.21**	-.19**	.10*	-.29**	.84			
9. Agreeableness	3.31 (0.65)	.12*	-.01	-.10*	-.10*	-.12*	.29**	-.19**	.33**	.80		
10. Conscientiousness	3.86 (0.62)	.26**	.05	-.31**	-.35**	-.28**	.41**	-.12*	.46**	.31**	.81	
11. Openness to Experience	3.53 (0.68)	.13**	.02	-.16**	-.18**	-.16**	.20**	-.08	.44*	.30**	.40**	.79

Note. $N = 494$ for variables measured in the initial battery (i.e., Best and Worst Strategy Beliefs and HEXACO). Interpersonal hostility, workplace ostracism, and abusive supervision were measured in the 12 twelve weekly surveys; correlations in the table are with averages computed across the twelve weeks (N s range from 451 to 460 for those variables). * $p < .05$ ** $p < .005$. Cronbach α reliability coefficients appear on the diagonal.

Table 6. Multilevel model of interpersonal hostility at work over the course of three months (Study 4).

<i>Predictor</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Best Strategy=Mutual Cooperation	-0.76	0.25	-3.07	<0.01
Worst Strategy=Mutual Competition	-0.16	0.14	-1.07	0.29
Honesty-Humility	-0.25	0.14	-1.80	0.07
Emotionality	0.05	0.14	0.35	0.73
Extraversion	-0.33	0.13	-2.54	0.01
Agreeableness	-0.15	0.13	-1.11	0.27
Conscientiousness	-0.36	0.15	-2.42	0.02
Openness to exp.	0.04	0.13	0.30	0.76
Age	-0.01	0.01	-0.87	0.38
Log income	-0.26	0.14	-1.91	0.06
Tenure at job (months)	0.00	0.00	1.62	0.11
Female	-0.11	0.17	-0.65	0.51
Bachelor degree or more vs. less education	-0.09	0.16	-0.57	0.57
Supervisor vs. not a supervisor	0.26	0.16	1.60	0.11
African-American ^a	0.30	0.27	1.14	0.26
Hispanic ^a	-0.36	0.34	-1.06	0.29
Asian ^a	-0.32	0.51	-0.63	0.53
Other ethnicity ^a	-0.07	0.27	-0.28	0.78
No enforcement of ethics code ^b	0.82	0.41	1.98	0.05
Loose ethics code ^b	0.16	0.28	0.58	0.57
Strict ethics code ^b	-0.02	0.28	-0.07	0.94
Doesn't know about ethics code ^b	-0.11	0.47	-0.23	0.82
Non-profit sector ^c	0.15	0.24	0.62	0.54
Governmental sector ^c	0.04	0.21	0.18	0.84
Self-employed ^c	0.66	0.34	1.93	0.06
# of employees < 20 ^d	-0.76	0.28	-2.66	0.01
# of employees < 100 ^d	-0.27	0.20	-1.38	0.17
# of employees < 500 ^d	-0.36	0.23	-1.60	0.11
Week number	-0.09	0.02	-5.56	<0.01
Intercept	-0.97	0.38	-2.58	0.01

Note. $N = 441$. Unstandardized coefficients (B) from multilevel model are presented. ^a The reference category for the race variables was White. ^b The reference category for the ethics code variables was no ethics code. ^c The reference category for the organizational sector variables was the private for-profit sector. ^d The reference category for the organizational size variables was more than 500 employees.

Table 7. Multilevel models of workplace ostracism at work over the course of three months (Study 4).

<i>Predictor</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Best Strategy=Mutual Cooperation	-1.43	0.26	-5.40	<0.01
Worst Strategy=Mutual Competition	-0.11	0.18	-0.60	0.55
Honesty-Humility	-0.42	0.17	-2.41	0.02
Emotionality	0.14	0.17	0.84	0.40
Extraversion	-0.51	0.19	-2.75	0.01
Agreeableness	0.02	0.17	0.09	0.93
Conscientiousness	-0.51	0.18	-2.75	0.01
Openness to exp.	-0.11	0.16	-0.68	0.50
Age	-0.01	0.01	-1.45	0.15
Log income	-0.32	0.17	-1.86	0.06
Tenure at job (months)	0.00	0.00	1.93	0.06
Female	-0.10	0.20	-0.48	0.63
Bachelor degree or more vs. less education	0.10	0.20	0.49	0.62
Supervisor vs. not a supervisor	0.18	0.19	0.97	0.33
African-American ^a	0.51	0.32	1.61	0.11
Hispanic ^a	-0.02	0.35	-0.06	0.96
Asian ^a	-0.15	0.47	-0.31	0.76
Other ethnicity ^a	0.12	0.36	0.34	0.74
No enforcement of ethics code ^b	1.33	0.49	2.71	0.01
Loose ethics code ^b	0.43	0.34	1.26	0.21
Strict ethics code ^b	0.47	0.34	1.38	0.17
Doesn't know about ethics code ^b	0.80	0.47	1.72	0.09
Non-profit sector ^c	0.07	0.28	0.26	0.80
Governmental sector ^c	0.12	0.26	0.47	0.64
Self-employed ^c	0.53	0.44	1.20	0.23
# of employees < 20 ^d	-0.45	0.39	-1.16	0.25
# of employees < 100 ^d	-0.40	0.25	-1.58	0.12
# of employees < 500 ^d	0.04	0.27	0.17	0.87
Week number	-0.08	0.02	-4.69	<0.01
Intercept	-1.37	0.45	-3.07	0.00

Note. $N = 441$. Unstandardized coefficients (B) from multilevel model are presented. ^a The reference category for the race variables was White. ^b The reference category for the ethics code variables was no ethics code. ^c The reference category for the organizational sector variables was the private for-profit sector. ^d The reference category for the organizational size variables was more than 500 employees.

Table 8. Multilevel models of abusive supervision over the course of three months (Study 4).

<i>Predictor</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Best Strategy=Mutual Cooperation	-1.04	0.28	-3.74	<0.01
Worst Strategy=Mutual Competition	-0.37	0.18	-2.09	0.04
Honesty-Humility	-0.34	0.18	-1.94	0.05
Emotionality	0.12	0.17	0.71	0.48
Extraversion	-0.49	0.16	-3.07	<0.01
Agreeableness	0.00	0.17	0.02	0.98
Conscientiousness	-0.21	0.18	-1.16	0.25
Openness to exp.	-0.07	0.16	-0.44	0.66
Age	-0.02	0.01	-1.88	0.06
Log income	-0.28	0.17	-1.67	0.10
Tenure at job (months)	0.00	0.00	1.23	0.22
Female	0.09	0.21	0.41	0.68
Bachelor degree or more vs. less education	-0.01	0.20	-0.03	0.98
Supervisor vs. not a supervisor	0.43	0.19	2.23	0.03
African-American ^a	0.33	0.30	1.09	0.28
Hispanic ^a	-0.33	0.41	-0.82	0.42
Asian ^a	-0.17	0.59	-0.30	0.77
Other ethnicity ^a	0.13	0.32	0.41	0.68
No enforcement of ethics code ^b	1.09	0.46	2.37	0.02
Loose ethics code ^b	0.19	0.33	0.57	0.57
Strict ethics code ^b	-0.03	0.32	-0.09	0.93
Doesn't know about ethics code ^b	-0.21	0.50	-0.43	0.67
Non-profit sector ^c	0.05	0.30	0.17	0.86
Governmental sector ^c	0.29	0.25	1.15	0.25
Self-employed ^c	0.35	0.45	0.79	0.43
# of employees < 20 ^d	-0.44	0.33	-1.34	0.18
# of employees < 100 ^d	-0.57	0.25	-2.29	0.02
# of employees < 500 ^d	-0.41	0.29	-1.42	0.16
Week number	-0.08	0.02	-4.92	<0.01
Intercept	-1.28	0.45	-2.82	0.01

Note. $N = 434$. Unstandardized coefficients (B) from multilevel model are presented. ^a The reference category for the race variables was White. ^b The reference category for the ethics code variables was no ethics code. ^c The reference category for the organizational sector variables was the private for-profit sector. ^d The reference category for the organizational size variables was more than 500 employees.

Table 9. Logistic regression of Time 2 best strategy on Time 1 best and worst strategy, control variables, and experiences of organizational mistreatment (Study 4).

<i>Predictor</i>	<i>B</i>	<i>SE</i>	<i>Odds Ratio</i>	<i>p</i>
Time 1 Best Strategy=Mutual Cooperation	1.04	0.66	2.84	0.11
Time 1 Worst Strategy=Mutual Competition	-0.48	0.47	0.62	0.31
Honesty-Humility	1.03	0.46	2.79	0.02
Emotionality	0.03	0.47	1.03	0.94
Extraversion	-0.36	0.50	0.70	0.47
Agreeableness	-0.43	0.43	0.65	0.32
Conscientiousness	0.19	0.50	1.21	0.70
Openness to exp.	0.01	0.44	1.01	0.98
Age	0.04	0.03	1.04	0.10
Log income	-0.13	0.43	0.88	0.77
Tenure at job (months)	0.00	0.00	1.00	0.67
Female	0.28	0.57	1.32	0.63
Bachelor degree or more vs. less education	0.02	0.49	1.02	0.97
Supervisor vs. not a supervisor	-0.85	0.58	0.43	0.14
African-American ^a	-0.55	0.76	0.58	0.47
Hispanic ^a	0.47	1.05	1.60	0.66
Asian ^a	-0.16	1.37	0.85	0.91
Other ethnicity ^a	0.08	0.87	1.08	0.93
No enforcement of ethics code ^b	-1.01	0.93	0.36	0.28
Loose ethics code ^b	-0.46	0.74	0.63	0.54
Strict ethics code ^b	0.71	0.74	2.03	0.34
Doesn't know about ethics code ^b	-2.43	1.16	0.09	0.04
Non-profit sector ^c	1.01	1.19	2.74	0.40
Governmental sector ^c	-1.18	0.64	0.31	0.06
Self-employed ^c	1.50	1.33	4.50	0.26
# of employees < 20 ^d	-0.08	0.86	0.92	0.92
# of employees < 100 ^d	-0.47	0.63	0.62	0.45
# of employees < 500 ^d	0.06	0.71	1.06	0.94
Organizational mistreatment	-0.90	0.28	0.41	<0.01
Intercept	2.18	1.13	8.82	0.05

Note. $N = 284$. Unstandardized coefficients (B) from logistic regression are presented. ^a The reference category for the race variables was White. ^b The reference category for the ethics code variables was no ethics code. ^c The reference category for the organizational sector variables was the private for-profit sector. ^d The reference category for the organizational size variables was more than 500 employees.

Table 10. Logistic regression of Time 2 worst strategy beliefs on Time 1 best and worst strategy, control variables, and experiences of organizational mistreatment (Study 4).

<i>Predictor</i>	<i>B</i>	<i>SE</i>	<i>Odds Ratio</i>	<i>p</i>
Time 1 Best Strategy=Mutual Cooperation	0.16	0.45	1.17	0.73
Time 1 Worst Strategy=Mutual Competition	0.59	0.27	1.80	0.03
Honesty-Humility	0.33	0.26	1.39	0.22
Emotionality	0.21	0.26	1.23	0.41
Extraversion	0.11	0.25	1.12	0.65
Agreeableness	-0.30	0.24	0.74	0.22
Conscientiousness	-0.20	0.28	0.82	0.48
Openness to exp.	-0.12	0.23	0.89	0.61
Age	0.02	0.01	1.02	0.14
Log income	0.59	0.26	1.81	0.02
Tenure at job (months)	0.00	0.00	1.00	0.03
Female	0.18	0.32	1.19	0.58
Bachelor degree or more vs. less education	-0.24	0.29	0.79	0.40
Supervisor vs. not a supervisor	-0.24	0.29	0.78	0.41
African-American ^a	0.38	0.48	1.46	0.44
Hispanic ^a	-0.80	0.60	0.45	0.18
Asian ^a	-0.21	0.87	0.81	0.81
Other ethnicity ^a	0.10	0.56	1.11	0.86
No enforcement of ethics code ^b	-0.27	0.63	0.76	0.67
Loose ethics code ^b	0.22	0.47	1.25	0.63
Strict ethics code ^b	-0.54	0.44	0.58	0.21
Doesn't know about ethics code ^b	-0.36	0.77	0.70	0.64
Non-profit sector ^c	0.10	0.41	1.11	0.81
Governmental sector ^c	0.62	0.43	1.86	0.15
Self-employed ^c	0.59	0.59	1.81	0.31
# of employees < 20 ^d	0.00	0.48	1.00	0.99
# of employees < 100 ^d	0.04	0.37	1.04	0.92
# of employees < 500 ^d	0.48	0.39	1.62	0.21
Organizational mistreatment	0.21	0.21	1.24	0.30
Intercept	-0.17	0.67	0.84	0.80

Note. $N = 284$. Unstandardized coefficients (B) from logistic regression are presented. ^a The reference category for the race variables was White. ^b The reference category for the ethics code variables was no ethics code. ^c The reference category for the organizational sector variables was the private for-profit sector. ^d The reference category for the organizational size variables was more than 500 employees.

Table 11. Means (standard deviations) for relationship conflict, interpersonal hostility, and ostracism toward each target, and ratings of perceived self-interestedness and aggressiveness of each target.

Mental Model of Target	Relationship		Interpersonal		Self-Interest	Aggressiveness
	Conflict	Hostility	Ostracism	Hostility		
Best Strategy =						
Mutual Cooperation	1.81 _a (.74)	1.51 _a (.67)	1.99 _a (1.09)	3.08 _a (.95)	1.92 _a (1.02)	
Best Strategy =						
Unilateral Competition	3.72 _b (.77)	2.86 _b (.78)	4.39 _b (.70)	4.69 _b (.59)	4.27 _b (.81)	
Worst Strategy =						
Mutual Competition	1.91 _a (.86)	1.55 _a (.72)	2.06 _a (1.12)	2.83 _a (.91)	1.67 _a (.86)	
Worst Strategy =						
Unilateral Competition	2.24 _a (.96)	1.74 _a (.71)	2.54 _a (1.36)	3.21 _a (1.06)	2.43 _b (1.13)	

Note. Within best strategy beliefs and within worst strategy beliefs, means with different subscripts differ significantly from each other ($ps < .001$); means with the same subscript do not differ significantly ($p > .05$).

Figure 1. A simplified example of an associative network linking strategy concepts and outcome concepts in an individual's mental model of conflict.

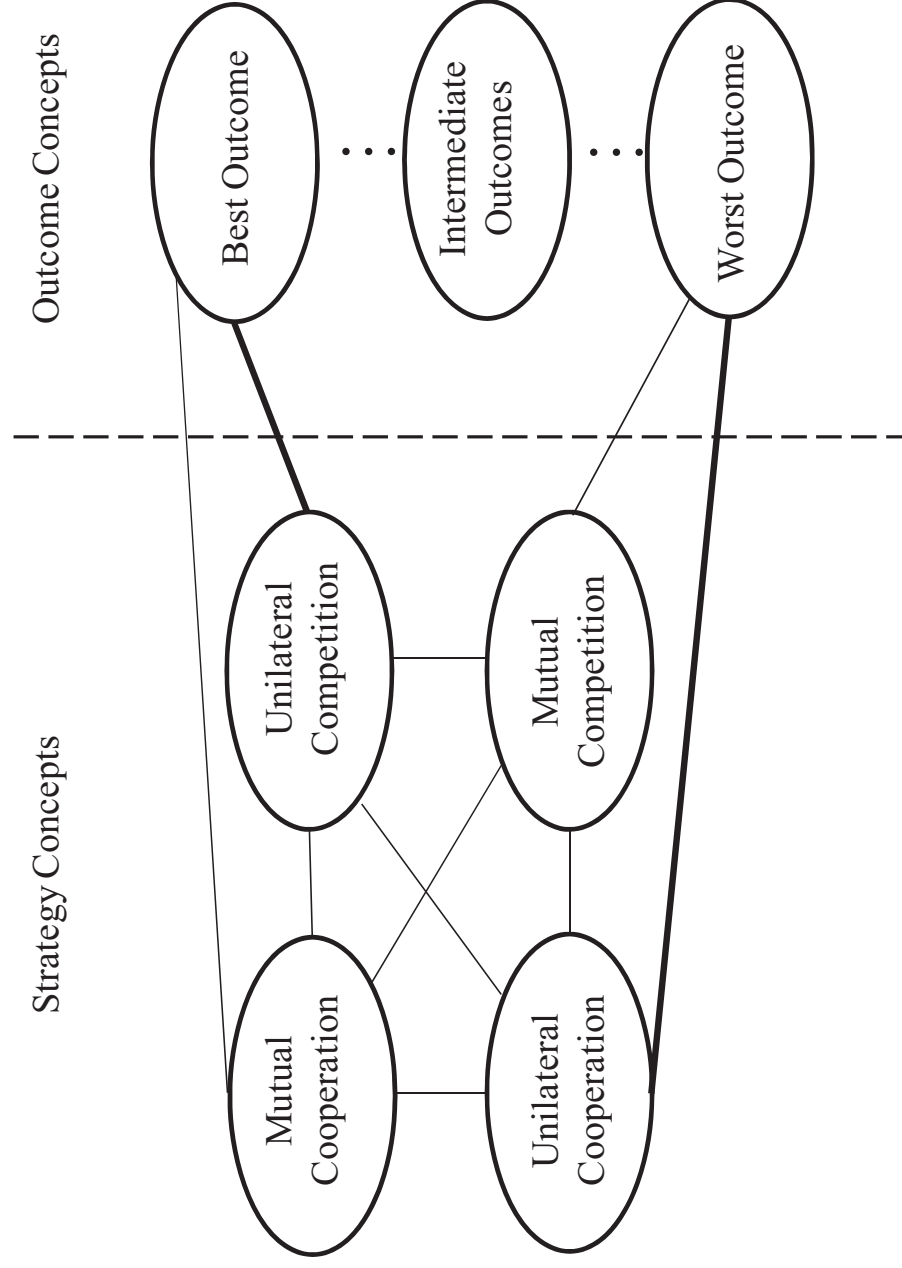
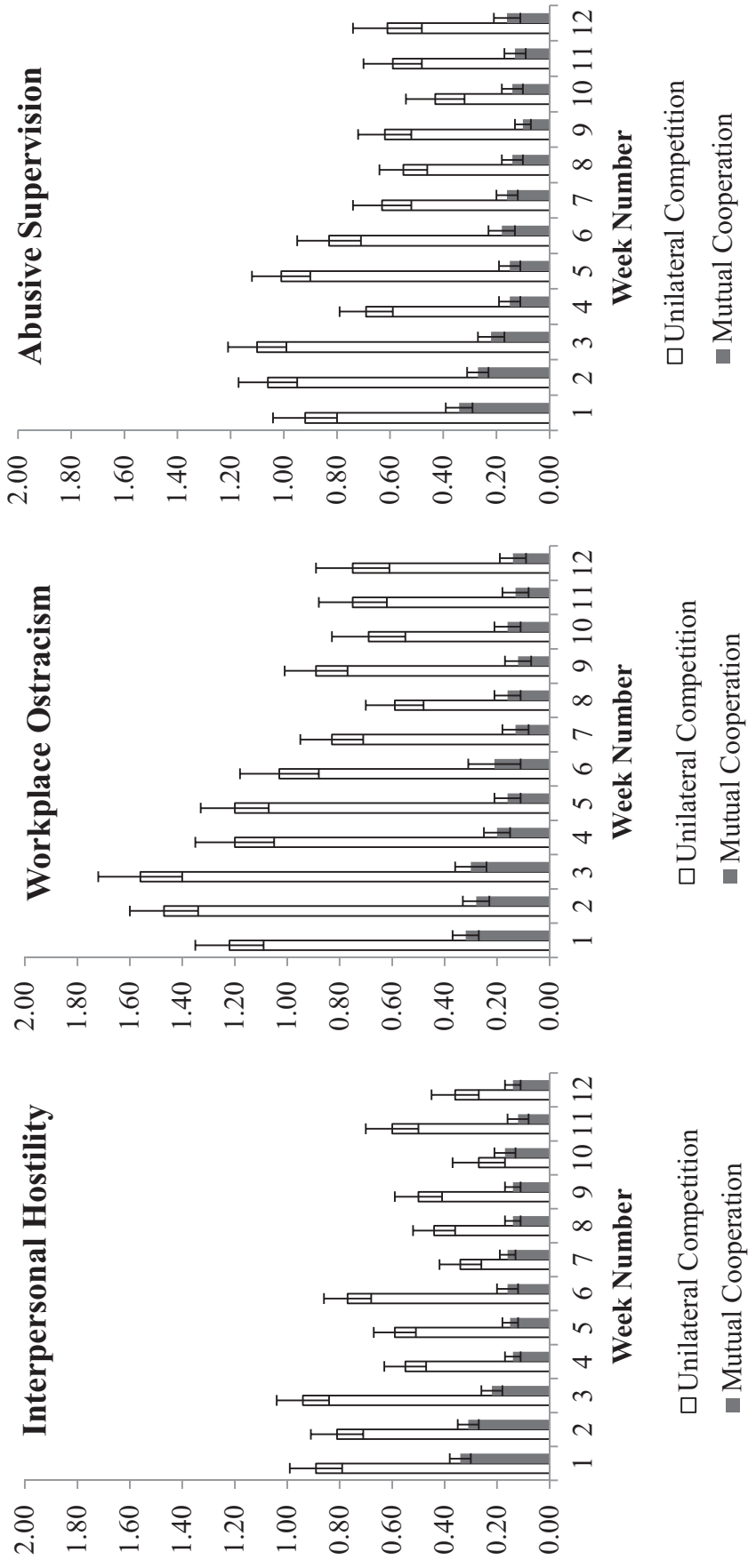


Figure 2. Weekly reports of interpersonal hostility at work, workplace ostracism, and abusive supervision as a function of aspiration beliefs assessed in the initial survey (Study 4).



Note. Error bars represent 1 standard error above and below the mean. Due to missing data, these analyses are based on samples ranging in size from $N = 258$ (week 12) to $N = 380$ (week 1).