The Adversarial Mindset

Dan Simon (Corresponding author)
USC, Gould School of Law and Department of Psychology
699 Exposition Blvd.
Los Angeles, CA 90089-0071
dsimon@law.usc.edu

Minwoo Ahn
USC Department of Psychology

Douglas N. Stenstrom
California State University, Los Angeles, Department of Psychology

Stephen J. Read
USC Department of Psychology
The Adversarial Mindset

Abstract

Many social outcomes are reached by means of competitions between opposing actors. While the positive effects of competition are beyond dispute, this paper contends that competitive situations also trigger a particular psychological mindset that can distort contestants’ judgment and lead to suboptimal courses of action. The paper presents a theoretical framework that consists of a myside bias, by which people adopt a self-serving view of the competition, evaluate themselves favorably, and evaluate their counterpart unfavorably. The framework also proposes the construct of otherside bias, by which people impute to their counterparts distortions that are similar, but opposite, to their own. The combined effect of these biases is to fuel conflict-promoting behavior. Next, the paper presents two experiments designed to test this framework. Using minimalistic experimental treatments, we find that participants assigned to adversarial roles display the myside and otherside biases.

The primary objective of this paper is to offer a comprehensive account of the psychological mindset evoked by competitive situations. We integrate findings established across a variety of research fields into a unifying theoretical framework and demonstrate their joint impact on this important domain of human judgment and behavior. Second, we propose that coherence-based reasoning serves as the cognitive backbone of the framework, in that the array of judgments are intricately interconnected and organized in a coherence maximizing representational structure both within and between the myside and otherside biases. Third, we discuss the framework’s implications for a variety of legal domains, including negotiations, litigation, expert testimony, and police investigations.
Keywords: Adversarialism; Myside bias; Otherside bias; Coherence Effect

Introduction

Many decisions across public and private domains are reached by means of a contest between opposing actors. In some settings, the adversarial contest is built into the process, such as in political elections, free market economies, and the Anglo-American legal system. In other situations, adversarialism is implied by the context, such as when rival ideological platforms battle over public opinion, inventors compete over the adoption of their technologies, coworkers vie for a promotion, and business entities negotiate a deal and disputants pursue a settlement rather than face one another in court. It is beyond dispute that competition motivates the adversaries to succeed and thus tends to promote wealth-maximizing outcomes. Yet despite their obvious advantages, competitive processes ought not to be deemed an unmitigated good. The framework we propose suggests that while adversarial contexts motivate contestants to pursue their interests more vigorously, it also triggers a mindset that tends to spur unintended, and perhaps undesirable, consequences.

We take as a starting point the fundamental tenet of psychological research that people’s behavior does not follow directly from an objectively verifiable state of the world. Inevitably, people act on the basis of their subjective understanding of their situation (Asch, 1946; Bruner 1957; Lewin, 1951). In this vein, we explore how the adversarial environment impacts the protagonists’ mindset, and how the actions based on that mindset could affect the contest in return. In particular, we suggest, the adversarial mindset leads contestants to adopt biased views of the situation, which can lead them to adopt courses of action that they might not adopt otherwise. Under some circumstances, these courses of action depart from optimal behavior and defeat the adversaries’ own interests.
Take for example the context of negotiations. Negotiations are known to be hindered by a number of psychological impediments (Bazerman, Curhan, Moore, & Valley, 2000; Brett & Thompson, 2016; Ross & Ward, 1995). For one, parties to negotiations tend to overestimate the strength of their case and to be unduly overconfident in the prospect of prevailing (Allwood, & Granhag, 1999; Goodman-Delahunty, Granhag, Hartwig, & Loftus, 2010; Neale & Bazerman, 1985). Second, parties tend to view their case as more just and fair than their opponents’ (Babcock, Loewenstein, Issacharoff, & Camerer, 1995; Loewenstein, Issacharoff, Camerer, & Babcock, 1993). Third, negotiating parties tend to display the incompatibility error, by which they presume that the other party's interests are necessarily incompatible and contradictory to their own (Thompson, 1995; Thompson & Hastie, 1990). Fourth, negotiating parties tend to view disputes as zero-sum competitions, rather than seek integrative solutions that could be beneficial to both parties (De Dreu, Weingart, & Kwon, 2000; Deutch, 1977; Neale & Bazerman, 1991; Raiffa, 1982; Thompson & Hrebec, 1996). Fifth, negotiating parties tend to be disinclined or incapable of engaging in perspective taking, that is, viewing the situation through their counterpart’s perspective (Carroll, Bazerman, & Maury, 1988; Galinsky, Maddux, Gilin, & White, 2008). Sixth, negotiators tend to display reactive devaluation, by which parties distrust and disfavor proposals put forth by the counterpart and thus stand to forego potential opportunities for beneficial resolutions (Oskamp, 1965; Ross, 1995; Ross & Stittinger, 1991). Finally, as discussed below, parties to negotiation display a tendency to escalate conflict even in the face of more advantageous conciliatory or cooperative courses of action (Carnevale & Pruitt, 1992; de Dreu, Aaldering, & Saygi, 2015; Deutsch, 1977, 2008; Kelman, 2008).

It is telling that even within this single domain of negotiation, these findings are typically presented as standalone observations. Notably, these bodies of research tend to present the
respective findings as acting in isolation, lacking an appreciation for their joint impact on adversarial actors. Nor do these bodies of research seek to offer a unifying theoretical framework for the array of findings. These shortfalls become more pronounced when we gather findings pertaining to adversarial behavior that are culled from additional, and more diverse, fields of research. Our proposed framework seeks to fill this void.

This article begins with the presentation of a theoretical framework that underlies the adversarial mindset. The central pillar of the framework pertains to a series of construals and judgments that, we contend, tend to be skewed systematically in ways that are self-serving and self-affirming. These views can be collapsed under the heading of the *myside bias*. The framework’s second pillar pertains to perceptions that adversaries impute to their counterparts. These imputed judgments—which can be labeled the *otherside bias*—tend to view the counterpart’s position as biased toward supporting the counterpart’s interests. In combination, the myside and otherside biases facilitate a behavioral tendency to escalate the contest. This escalatory tendency constitutes the third pillar of the framework. In the second part of the article, we report on two experiments that were designed to directly test the first two pillars of the proposed framework, and to seek suggestive evidence of the third. To identify the effect of adversarial assignments, the studies compare participants operating in an adversarial capacity with participants operating in a neutral, non-adversarial, capacity. These studies were designed to replicate, integrate and examine the joint effect of findings from across the fields of social judgment, social cognition, judgment and decision making, and negotiations. The studies compliment these findings by examining the breadth and scope of the mindset, its boundary conditions, the interactions among its multiple dimensions, the relationship between cold- and hot-cognitions, and the accompanying
metacognitive judgments. The studies also test the prospect of partial awareness of the biased nature of the mindset.

Importantly, the studies explore the cognitive mechanism which we believe drives the process. We propose that the cognitive backbone of the framework is best understood as an instantiation of coherence based reasoning, which is grounded in parallel constraint satisfaction processes (McClelland & Rumelhart, 1986). The core feature of coherence based reasoning is that the cognitive process transforms the representations of complex and conflicting tasks into coherent mental models, which afford confident decisions (Glöckner & Engel, 2013; Holyoak & Thagard, 1989; Read, Vanman, & Miller, 1997; Simon, 2004; Simon & Holyoak, 2002; Thagard, 2000, 2019). This approach suggests that a construal of a situation tends to be bound together in a Gestaltian fashion encapsulated by the coherence effect (Read & Simon, 2012; Simon, 2004; Simon et al., 2015). Accordingly, to the extent that the adversarial assignment has the effect of swaying adversaries towards a particular side of the issue, it will likely seep through the entire representation of the case at hand and skew it towards a state of coherence with the respective assignment (see Engel & Glöckner, 2013; Holyoak & Simon, 1999; Simon, Krawczyk, & Holyoak, 2004a; Simon, Snow, & Read, 2004b). The richness of the experimental stimuli used in the current studies enable us to test for the emergence of coherence along the multiple dimensions of the tasks. Replicating prior findings, we explore the coherence effect among the numerous factual inferences entailed in the assigned scenarios, between the pattern of factual inferences and the overall judgments of the case, among the hot cognitions evoked by the task, and between the factual inferences and overall judgments on the one hand, and participants’ hot cognitions on the other. Furthermore, we explore two novel hypotheses: that coherence emerges among the judgments attributed to a third party (imputed coherence), and among the differences between participants’
own judgments and the judgments they impute to a third party, that is, the discrepancy between the myside and otherside biases.

The Myside Bias

The central pillar of the adversarial mindset is the myside bias (see Baron, 1995; Perkins, 1989), a construct which we feel has been under-appreciated and under-utilized in the research. Building on the seminal work of Kunda (1990), Keith Stanovich and colleagues have defined the bias as the tendency of people to “evaluate evidence, generate evidence, and test hypotheses in a manner biased toward their own prior beliefs, opinions, and attitudes.” (Stanovich, West, & Toplak 2013, p. 259; see also Stanovich & West, 2007). Moore, Tanlu, and Bazerman (2010) broadened the construct to include favoring “the outcome [people] desire.” (p. 38). The myside bias will naturally be triggered by a person’s assumption of a role in the adversarial situation, whether in the form of being an interested party or a professional tasked with assisting an interested party. In this sense, the myside bias shares some properties with the constructs of role-induced bias (Eigen & Listokin, 2012; Engel & Glöckner, 2013; Spamann, in preparation) and adversarial allegiance (Murrie & Boccaccini, 2015; Murrie, Boccaccini, Guarnera, & Rufino, 2013).

Competitive contexts serve as a fertile ground for the myside bias and render it a germane and instructive construct. We propose that in adversarial contexts, the myside bias will manifest itself in four ways: a self-serving construal of the subject matter of the contest, hot cognitive reactions to the contest, a favorable perception of the self, and an unfavorable perception of one’s counterpart.

*Biased Construal of the Contest.* The core feature of the myside bias pertains to the manner in which the parties perceive and evaluate the subject matter of the contest, that is, their construal of the contest: its factual basis, history, fairness, affective connotations, conduct of the adversaries,
and much more. The myside bias predicts that adversaries will routinely construe the factual situation as supportive of their own position. Take for example Hastorf and Cantril’s (1954) classic study of the infamous football game between Dartmouth and Princeton colleges in 1951. After viewing the game on film, students from the respective colleges provided dramatically discrepant accounts of what occurred on the field. The groups counted higher numbers of infractions perpetrated by the other team and fewer by their own, they judged the opposite team’s infractions as more flagrant, and blamed the opposing team for starting the rough play. In short, Hastorf and Cantril (1954) concluded, the two groups seemed to have been watching a different game. Similar self-serving construal was observed in a study that simulated a negotiation for damages stemming from a traffic accident. Participants were given a rich set of materials taken from a real tort case and were encouraged to negotiate a settlement. The results showed that participants’ evaluations of the case were strongly skewed in favor of their (randomly assigned) roles, in that those assigned to the role of plaintiff assessed the fair level of settlement to be almost double the sum assessed by participants assigned to the role of defendant (Loewenstein et al., 1993). Participants also expected that a judge’s evaluation of the case and assessment of fairness would be skewed towards their respective positions (Babcock et al. 1995).

Factual distortions of this kind are evident across a range of studies conducted in the laboratory and the field. A study by Kruger and Gilovich (1999), found that married couples tended to claim more credit for desirable conduct, such as resolving conflict, conserving energy and being communicative, and they attributed a greater share of undesirable conduct to their spouses, such as taking frustrations out on the partner. Group members tend to give higher ratings to the work product of their own groups over rival groups (Ferguson & Kelley, 1964. See also Blake & Mouton, 1962), and to judge the performance of in-group members to be superior to out-group
members (Sherif, Harvey, White, Hood, & Sherif, 1961). Law students tend to endorse the merits of cases randomly assigned to them in moot court programs, and they also expect the judges to share their assessment (Eigen & Listokin, 2012). Similar distortions are displayed by professionals and experts. Professional auditors affiliated with a firm are more inclined to approve its audit (Moore, Tetlock, Tanlu, & Bazerman, 2006; Moore et al., 2010). Clinical psychologists’ evaluations of criminal defendants are found to be skewed towards the interests of the party that retained them (Murrie, Boccaccini, Guarnera, & Rufino, 2013; Murrie & Boccaccini, 2015).

**Hot Cognitions.** The second feature of the myside bias is that adversarial situations tend to evoke what have traditionally been labeled “hot cognitions” (see Abelson, 1963; Lepper, 1994; Sorrentino & Higgins, 1986). We propose that construals of adversarial situations will likely be accompanied by negative and positive emotions, liking and disliking of the protagonists, and most importantly, motivation with respect to the outcome of the contest. As observed by Simon, Stenstrom & Read (2015), the coherence effect captures both the effect of cold cognitions on hot cognitions (see Ellsworth & Scherer, 2003; Frijda, 1986; Lazarus, 1966; Roseman, 1984), and the effect in the opposite direction (see Goldberg, Lerner, & Tetlock, 1999; Loewenstein & Lerner, 2003; Slovic, Finucane, Peters, & MacGregor, 2007).

**Perceptions of Oneself.** Third, adversaries will tend to generate positive views of themselves (Sedikides & Alicke, 2012), and of their team members (Sherif et al., 1961). These evaluations will be couched in whichever dimensions are relevant to the particular contest, such as fairness, competence, honesty, or objectivity. For example, in the aftermath of the Princeton-Dartmouth football game studied by Hastorf and Cantril (1954), the Princeton students claimed the high moral ground by portraying themselves as being driven by an honest attempt to prevent further violence in college football. Across a range of contests, people report perceiving themselves as being fair
(Frantz, 2006), friendly (Thompson, 1995), honest (Ehrlinger, Gilovich, & Ross, 2005), realistic (Ehrlinger et al., 2005), moral (Epley & Dunning, 2000; Miller & Ratner, 1998), cooperative (Epley & Dunning, 2000), and non-conformist (Pronin, Berger, & Molouki, 2007). Most germane for the purposes of the current study, people also manifest a tendency to perceive themselves as being objective and unbiased (Ehrlinger et al., 2005; Pronin, Gilovich, & Ross, 2004; Pronin & Kugler, 2007; Pronin, Lin, & Ross, 2002; Uhlmann & Cohen, 2007).

Perceptions of the adversary. Fourth, we propose that people engaged in adversarial situations will tend to cast their opponents in a negative light, mostly along the same dimensions that are relevant to the particular contest, such as fairness, competence, honesty, or objectivity. Typically, these evaluations will be unfavorable and opposite to the judgments of oneself. For example, the Dartmouth students undercut the Princeton students’ claims to morality, characterizing their complaint as mere whining about the injury sustained by their star quarterback (Hastorf & Cantril, 1954). We see evidence of unfavorable perceptions of one’s counterpart in disagreements between roommates, family members, and co-workers (Frantz, 2006), political rivals (Kennedy & Pronin, 2008), debate competitors (Kruger & Gilovich, 1999), and members of other ethnic groups (Ehrlinger et al., 2005). In other contexts, people perceive their counterparts as being unfair (Frantz, 2006), conformist (Ehrlinger et al., 2005), unrealistically optimistic (Ehrlinger et al., 2005), selfish (Reeder, Pryor, Wohl, & Griswell, 2005), unfriendly (Thompson, 1995), and self-serving (Pronin & Kugler, 2007; Ehrlinger et al., 2005). Importantly, adversaries also tend to view their counterparts as prone to bias (Ehrlinger et al., 2005; Frantz, 2006; Pronin et al., 2004; Pronin & Kugler, 2007; Pronin et al., 2002; Robinson, Keltner, Ward, & Ross, 1995; Van Boven, Kamada, & Gilovich, 1999). Kennedy and Pronin (2008) observed that the more participants disagreed with their counterpart’s position, the more they perceived that position as biased.
As with most types of bias (Wilson & Brekke, 1994), the skewed judgments that constitute the myside bias are understood as occurring beneath the level of conscious awareness. People tend to view the world through a lens of naïve realism (Ross & Ward, 1995), by which they believe that their view of reality corresponds closely with reality itself (see also Kruger & Gilovich, 1999; Pronin et al., 2004). The compounded effect of a biased construal of reality, the denial of one’s bias, and the belief that one’s counterpart is biased constitutes the bias blind spot (Kruger & Gilovich, 1999; Molouki & Pronin, 2015; Pronin et al., 2004; Pronin et al., 2002).

The Otherside Bias

The second pillar of the adversarial mindset follows from the fundamental observation that people tend to go beyond the information given (Bruner, 1957). In this context, an adversary is expected to surmise how her or his counterpart will view the situation, thus conjuring a set of imputed beliefs that we propose to label the otherside bias. This construct consists of two sets of imputed judgments: one pertaining to the counterpart’s construal of the contest (its factual basis, history, fairness, affective connotations, etc.) and the second pertaining to a reverse person perception, specifically, how a person (say, Jim) believes he will be viewed by his counterpart (say, Jane).

*Imputed Construals of the Contest.* At its core, the otherside bias consists of the proposition that an adversary (Jim) will expect his counterpart (Jane) to construe the contest in a biased manner (Jim will expect Jane to interpret the facts, history, fairness etc. as supportive of her side). Naturally, that imputed construal will be markedly discrepant—indeed, largely opposite from—Jim’s own view of the contest. The abovementioned study of married couples conducted by Kruger and Gilovich (1999), found that the respondents expected their spouses to claim more than their share of the credit for the desirable activities but less than their share of the blame for the
undesirable activities. In a similar vein, Robinson and colleagues asked college students to evaluate a report of a real life trial of a racially motivated crime perpetrated by a group of white defendants against an African American victim. Consistent with the myside bias, the participants’ ideological leanings led to discrepant construals of the case, with conservative participants offering an evaluation of the facts that was more sympathetic to the white defendants, and the liberal participants offering inverse construals. Consistent with the otherside bias, both groups of participants imputed to their counterparts judgments that were largely opposite to their own (Robinson et al., 1995).

Importantly, there is preliminary evidence to suggest that imputed construals can be exaggerated (see Robinson et al., 1995). Kruger and Gilovich (1999) found that participants expected their spouses’ claims to be considerably more self-serving than they actually were. Inflated estimates of imputed construals have been observed in the context of social conflict (see Dawes, Singer, & Lemons, 1972), debate tournaments (Kruger & Gilovich, 1999), ideological divides (Sherman, Nelson, & Ross, 2003), and political rivalry (Scherer, Windschitl, & Graham, 2015). These exaggerated imputations have been labeled *imagined extremism* (Keltner & Robinson, 1996) or *false polarization* (Kenyon, 2014; Monin & Norton, 2003). For convenience, we will adopt the former term, imagined extremism.

**Imputed Reverse Perception.** The second feature of the otherside bias concerns how adversaries will expect to be judged by their counterparts—that is, what Jim believes that Jane will think about him (see Frey & Tropp, 2006; Malloy & Janowski, 1992). The expectation of the adversarial mindset is that this imputed reverse judgment will be unfavorable (Jim will expect that Jane will think poorly of him), effectively mirroring the adversary’s own judgment of the counterpart (Jim’s adverse view of Jane), thus creating a schema of mutual unfavorable views.
Behavioral Tendencies

The framework’s third pillar pertains to the behavioral tendencies that are likely to follow from the adversarial mindset. Conflict researchers have established that behavior in situations of conflict falls into two primary modes: conflict escalation through competitive and aggressive behaviors, or de-escalation through cooperative behavior (Carnevale & Pruitt, 1992; de Dreu et al., 2015; Deutsch, 1977, 2008; Kelman, 2008). Naturally, one’s actions in a conflict situation will depend on how one construes the conflict. As proposed by this framework, people involved in contested situations may well fail to appreciate the extent to which the contest differs from their perception of it. Adversaries are expected to be immersed in self-serving interpretations of the factual situation alongside an expectation of biased interpretations by their counterparts, favorable perceptions of themselves and unfavorable perceptions of their counterparts, all compounded with concomitant hot cognitions. It is not difficult to see how this mindset will fuel behavioral tendencies to generate or exacerbate conflict.

Importantly, conflict escalation often results in self-defeating outcomes. For example, in a series of studies by Loewenstein, Babcock and colleagues, participants were assigned to play the role of adversaries in a realistic negotiation in advance of litigation of a tort case. Participants were faced with a series of opportunities to negotiate a settlement. Mimicking the mounting costs of litigation, the study taxed (actual) money from the participants for every round in which they failed to settle. The studies found that participants’ self-serving biases hurt their performance: the stronger the bias, the less likely they were to settle and the more money they left on the table (Babcock et al., 1995; Loewenstein et al., 1993). Self-defeating effects of bias were observed also in a field study conducted with law students participating in a moot court program. The stronger
participants believed in the superiority of their side (to which they were randomly assigned), the worse they performed (Eigen & Listokin, 2012).

To be sure, the experience of partaking in an adversarial contest is neither uniform nor monolithic. The adversarial mindset will undoubtedly be moderated by a host of factors, such as the nature and intensity of the stakes involved, the history of the contest, the adversaries’ personalities, and their dynamic interactions with team members, advisors and counterparts. Thus, the proposed framework cannot be expected to apply equally to all adversarial contests or to account for all psychological features that could be implicated in any given contest. Rather, it is a general framework that seeks to capture the central and habitual features of contests, while maintaining the flexibility to encompass particular aspects that will inevitably vary across situations.

**Overview of Studies**

The following studies were designed with the goal of examining the components of the proposed adversarial framework as discussed above. Study 1 involved a labor dispute that was being decided through an arbitration process, and study 2 involved a disciplinary hearing concerning an allegation of academic misconduct by a university student. In each study, participants were presented with a factually complex adversarial situation and were assigned to either an adversarial or non-adversarial role in the process. In the adversarial conditions, participants were assigned the role of serving on behalf of either one of parties: a Representative (essentially, an advocate) in study 1, and an investigator in study 2. Participants in these adversarial conditions were informed that another agent was assigned to play a similar role in favor of the opposite party. For the third group, the process was described as non-adversarial, in which the participant would serve the process as a whole, with no affiliation to either party. The key
findings were expected to be derived from comparing responses between the two adversarial assignments, and between those adversarial assignments and the non-adversarial assignment.

In both studies, participants were probed for the main components of the adversarial mindset. The primary focus was the myside bias, in particular, the manner in which participants construed the situation. In that vein, the study elicited from all participants’ their interpretation of the factual pattern, their overall judgments of the case, their hot cognitive reactions to the case, their evaluations of their own objectivity, and their evaluations of their counterpart’s objectivity. Participants assigned to the adversarial conditions were asked also for their evaluation of their counterparts’ objectivity. To test the otherside bias, participants assigned to adversarial conditions were asked to impute how their counterpart would construe the case (imputed judgments), and how they would judge the participant’s objectivity (reverse perception). Naturally, participants in the non-adversarial assignments had no counterparts, and thus could not be asked about an otherside bias. Given the limitations of the study design, we were unable to directly test whether participants would engage in escalatory behavior. Thus, we explored other facets of the task that could be expected to serve as predictors of behavior, in particular, the measure of motivation (Fishbein & Ajzen, 2011; Higgins, 1998).

Study 1

Method

Participants

Participants were 375 individuals who participated via the Internet. Participants were recruited through an affiliate of the online survey company Qualtrics, which maintains a large mailing list of individuals who have consented to be invited to participate in online studies in exchange for
small fees or rewards. We paid Qualtrics $5 per participant. Due to the length and complexity of the materials, we inserted a number of attention checks and memory tests to ensure that the participants were engaged in the task. Following the protocol used in Simon et al. (2015), data from 46 individuals were removed from the analysis: 11 people for not completing the study, one person for not completing the study within the designated timeframe, and 34 people for misremembering their assignment. This left us with usable data from 329 participants. The sample was 60% female and the mean age was substantially higher than found in college samples, M = 38, with a broader age range. 25% of our sample had not finished high school and the rest had a range from 1 to 8 years of post high school education, with a median of almost three years of college education. Political beliefs ranged from strongly liberal (14%) to moderate (21%) to strongly conservative (15%), with a mean of 6.1 on a 1(strongly liberal) to 11(strongly conservative) scale. 31% of the sample identified as Democratic, 28% as Independent and 26% as Republican. On a measure of religiosity 1 (not at all) to 11 (strongly religious), the mean response was 6.25, with a distribution that ranged from 24% who said that they were not at all religious (1) to approximately 24% who said they were strongly religious (11). We do not have ethnicity or race information on our sample. In all, our sample appears to be more diverse than undergraduate samples in terms of age, education, political beliefs, religiosity, and likely also geographical origin. As a result, we expect that our findings are more generalizable than comparable findings obtained from undergraduate samples. None of the demographic variables interacted with the results. The study was approved by the USC Internal Review Board, University Park Campus.

Materials and Procedure

Power considerations. We had an initial sample of 375 individuals. We used attention and memory tests to ensure that participants paid attention to instructions and knew what instructions they had been
given. After removing those who failed these tests, the resulting sample was 329, with three between subject conditions and over 100 participants per condition. As described in the Dependent Variables section, where relevant, we used multi item measures of our constructs. For example, we had six items in our measure of facts, 3 items for positive emotions and 4 items for negative emotions. In addition, we frequently used several different types of measures of our different constructs, such as Hot Cognitions and Measures of Objectivity.

Participants first read the online consent form and then completed the study online by clicking through a series of webpages that contained the instructions, the case information, and the measures. Participants performed the study alone at the time and place of their convenience. At the conclusion of the study participants were thanked for their participation.

The case stimuli were based on the same factual pattern used by Simon et al. (2004b) and replicated by Engel & Glöckner (2013), Glöckner & Engel, 2013, and Simon et al., (2015, study 2). In this study, the case was couched in a labor dispute in which a company accused its employee, Jason Wells, of stealing $5,200 from the company safe. According to the terms of the contract, such matters were to be decided by an arbitrator. The company asked the arbitrator to terminate Jason's employment and to order him to return the money. To reach a decision, the arbitrator would need to be presented with the facts of the case and with arguments for and against the company's claims. The case was said to have been investigated thoroughly by a reputable private investigator, and the parties’ arguments were to be made through appointed “Representatives.” All participants received the identical materials, with the exception of the assignment instructions.

Assignments. In the two adversarial conditions, participants were informed of the adversarial nature of the task, namely, that each party would be represented by an appointed Representative. Each of these participants was then assigned to either one of the Representative roles (company
Representative or Jason Representative). Participants assigned to represent the company (“company assignment”) were given the following instructions (the assignment labels were not mentioned in the materials):

Your job is to serve as a representative in such a hearing. Specifically, you are assigned to represent the company, Big Buildings Inc. at the disciplinary hearing. As the company's representative, your task is to persuade the arbitrator that Jason Wells did indeed steal the money from the company's safe. You seek to convince the arbitrator to affirm the termination of Jason's employment and to order him to return the money to the company.

To reinforce the adversarial nature of the task, these participants were presented with the following information:

Another representative will be assigned to make Jason's case. The task of that other representative is to persuade the arbitrator that Jason Wells did not steal the money from the company's safe and should therefore bear no responsibility for this incident.

The instructions given in the other adversarial condition (“Jason assignment”) were similar to the instructions given in the company assignment condition, except that the sides were reversed.

The third condition was designed to create a non-adversarial process, in which the Representative would serve a neutral role rather than just one of the sides in an adversarial contest. Participants assigned to this “neutral assignment” condition were instructed as follows:

According to the employment contract, the arbitrator should be assisted by a ‘Disciplinary Hearing Representative.’ You are assigned to serve as that representative. As the Disciplinary Hearing Representative, your job is to assist the arbitrator reach a fair decision.

To reinforce the non-adversarial nature of the task, these participants were presented with the following information:

Based on the investigator's report, you will present the arbitrator with your best understanding of the facts. You will present the arbitrator with arguments that do justice to both parties. In all, you are expected to perform your task in a fair and objective manner.

*Case facts.* All participants received the same evidence, which was mostly circumstantial, intricate, and ambiguous. The evidence was presented in eight web pages. The evidence consisted

18
of six items of evidence, some of which tended to support the conclusion that Jason Wells was guilty of the crime. For example, an eyewitness testified seeing Jason rushing from the crime scene, and three days after the crime, Jason repaid a debt of $4,870 to his credit card company. Other items tended to support Jason’s innocence: Jason had an alibi, namely, that he was seen 40 minutes after the crime occurred at a location that was a 45 minute drive away. Jason also offered an innocuous explanation for the source of the money he paid the credit card company.

*Dependent Variables.* Participants were never actually asked to argue the case. Rather, we probed for their responses to the dependent variables soon after they received factual information about the case. Except where mentioned otherwise, the following listing of the dependent variables corresponds to the order of the items as they appeared in the materials. Unless stated otherwise, the questions used 11-point Likert scales.

*Hot Cognitions.* Participants were probed for four measures of hot cognition, all presented in a randomized order. One measure asked participants to report how much they liked Jason, using both an 11-point Likert scale and a “liking thermometer” on a scale of 0-100. Participants were asked to report the extent to which they felt three positive emotions (sympathy, compassion, and sorrow) and four negative emotions (anger, disdain, hostility, disgust) towards Jason (emotion items were presented in a randomized order). To gauge participants’ valence towards the case, they were probed for how good/bad they would feel if Jason was ultimately determined to be the thief, and the same item was asked with respect to the prospect of him being cleared of any suspicion. Importantly, participants were presented with an item intended to gauge their motivation towards the outcome of the case (“How do you want the case to come out?” on a scale ranging from “strong preference to see Jason win” to “strong preference to see the company win”).
Evaluations of the case facts. To explore participants’ views of the case, we asked for evaluations of the six factual issues involved in the case. Participants were asked to report their agreement with various inferences drawn from the factual issues (on a scale ranging from “strongly disagree” to “strongly agree”). The fact measures were presented in a randomized order.

Overall Judgments. To obtain the most direct measure of the myside bias, participants were asked to estimate the likelihood that Jason did indeed steal the money (“In your opinion, what is the likelihood that Jason did in fact commit the crime?”), how they would decide the case (“If you had to decide the case, how would you decide it?”), and how did they expect the arbitrator would decide the case (“In your opinion, how will the arbitrator decide the case?”). We also included a meta-cognitive assessment of their view of the case by asking which of the parties did their view support (“Which side does your view of the case support?”). Participants were also asked to report the extent to which they identified with Jason (“To what extent do you identify with Jason Wells?”) and with the company (“To what extent do you identify with the company?”).

Judgments Imputed to the Other Representative. To explore the prospect of otherside bias, participants in the adversarial conditions were probed for their beliefs on how the other representative would view the case. Specifically, they were asked about the other representative’s estimation of the likelihood that Jason stole the money (“In your opinion, how will the other representative estimate the likelihood that Jason did in fact commit the crime?”), how the other representative would decide the case (“In your opinion, if the other representative had to decide the case, how would he or she decide it?”), and which side the other representative’s opinion would favor (“In your opinion, which side will the other representative's view of the case support?”).

Judgments of Objectivity. A total of five measures were used to explore participants’ assessments of objectivity. All participants were asked to assess their own objectivity (“To what
extent do you believe that your view of the case is objective?”), and to assess how the arbitrator would assess their objectivity (“In your opinion, how will the arbitrator perceive your view of the case?”). Participants in the adversarial assignments were also to report their views on the objectivity of the other representative (“In your opinion, how objective will the other Representative's view of the case be?”), how their own objectivity would be judged by the other representative (“In your opinion, how will the other Representative perceive your view of the case?”) (imputed reverse perception), and how the arbitrator would assess the other representative’s objectivity (“In your opinion, how will the arbitrator perceive the other representative’s view of the case?”). All objectivity measures were elicited on a scale ranging from “highly subjective” to “highly objective.”

Results

In the following analysis, we will compare responses from the three experimental conditions: two adversarial assignments (“Jason assignment” and “company assignment”) and the single non-adversarial condition (“neutral assignment”). Where the directionality of the measures is not self-evident, we aligned them with the company’s position, so that higher values correspond to greater support with the conclusion that Jason did in fact steal the money. We begin with the myside bias.

Inferences drawn from the case facts. First off, we examine participants’ construal of the facts of the case. Some of the 13 measures of the facts were phrased so that positive responses indicate that Jason did not steal the money (innocence items), and others were phrased in the opposite direction (guilt items). To analyze the data, we reverse coded the innocence items so that positive values of all questions indicate responses that are consistent with the conclusion that Jason did steal the money. As observed in Table 1, the inferences drawn from the facts were indeed influenced by the assignment: participants in the Jason assignment condition reported less
incriminating evaluations of the facts than participants assigned to the company assignment condition. It is notable that participants assigned to the neutral assignment condition gave evaluations that were very close to the mid-point between the evaluations offered in the adversarial conditions. For example, participants in the company assignment condition tended to trust the eyewitness more and the alibi less than participants in the Jason assignment condition, with evaluations from the neutral assignment falling in between.

**Overall Judgments.** Next we examine the effect of the assignment on participants’ overall judgment of the case. As seen in Table 1, the assignment impacted participants’ estimations of the likelihood that Jason stole the money, and it impacted participants’ responses to the metacognitive question which side of the case their view supports. We found also that the assignment influenced how participants would have decided the case themselves. Of the participants in the Jason assignment condition, 33.33% would have determined that he committed the crime, whereas that fraction was higher for the Neutral assignment and the company assignment conditions, 44.44% and 52.04% respectively, Chi-square (2) = 7.71, p = .02.
Table 1

Myside Bias: Participants’ overall judgments of the case

<table>
<thead>
<tr>
<th>Measure</th>
<th>Jason Assignment</th>
<th>Neutral Assignment</th>
<th>Company Assignment</th>
<th>F(2, 326)</th>
<th>p</th>
<th>h^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inferences drawn from the Case Facts*</td>
<td>4.67^b</td>
<td>5.15^c</td>
<td>5.53^a</td>
<td>7.12</td>
<td>&lt; .001</td>
<td>.04</td>
</tr>
<tr>
<td>Likelihood that Jason stole the money</td>
<td>49.76 %^b</td>
<td>55.34 %^c</td>
<td>58.71 %^a</td>
<td>4.6</td>
<td>&lt; .01</td>
<td>.03</td>
</tr>
<tr>
<td>View support (which side does your view support)*</td>
<td>5.34^b</td>
<td>5.91^b</td>
<td>6.48^a</td>
<td>5.56</td>
<td>&lt; .01</td>
<td>.03</td>
</tr>
</tbody>
</table>

* High values support the company’s position
Means that do not share a common subscript are significantly different at p < .05.

Hot cognitions. Next, we sought to explore whether the assignment would also influence the participants’ hot cognitive reactions to the stimulus. As seen in Table 2, the findings provide only partial support for that proposition. The assignment did not impact the liking of Jason, as measured on the liking thermometer (the more sensitive of the two liking measures), the composite of negative emotions towards Jason, or the composite of positive emotions towards Jason. The assignment had only a marginally significant impact on feelings about seeing Jason be cleared of the allegation, but had a significant impact on feelings of seeing him found guilty. Bearing in mind that our best proxy for behavior tendencies was participants’ motivation, we were keen to learn whether the assignment influenced this measure. The assignment had a strong influence on participants’ motivation, in that those assigned to the Jason assignment condition were more motivated to see Jason prevail than those in Company assignment, with those assigned to the
neutral assignment condition at the midpoint between the two. The assignment had no significant effect on the measures of identification with the respective parties.
Table 2.

*Myside Bias: Participants’ Hot Cognitions*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Jason Assignment</th>
<th>Neutral Assignment</th>
<th>Company Assignment</th>
<th>$F(2, 326)$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liking of Jason</td>
<td>51.66&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>49.8&lt;sup&gt;b&lt;/sup&gt;</td>
<td>47.48&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.11</td>
<td>.123</td>
</tr>
<tr>
<td>Negative Emotions towards Jason</td>
<td>2.28&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>2.23&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.26&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.043</td>
<td>.958</td>
</tr>
<tr>
<td>Positive Emotions towards Jason</td>
<td>3.31&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.16&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.11&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.611</td>
<td>.544</td>
</tr>
<tr>
<td>Feeling good seeing Jason cleared of charges</td>
<td>6.92&lt;sup&gt;b&lt;/sup&gt;</td>
<td>6.43&lt;sup&gt;c&lt;/sup&gt;</td>
<td>6.22&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.72</td>
<td>.068</td>
</tr>
<tr>
<td>Feeling good seeing Jason found responsible</td>
<td>4.86&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5.49&lt;sup&gt;c&lt;/sup&gt;</td>
<td>6.1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>8.73</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Motivation*</td>
<td>5.14&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5.91&lt;sup&gt;c&lt;/sup&gt;</td>
<td>6.74&lt;sup&gt;a&lt;/sup&gt;</td>
<td>12.1</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

*High values support the company’s position
Means that do not share a common subscript are significantly different at $p < .05$.

Evaluations Imputed to the Other Representative. The second pillar of the adversarial mindset pertains to the otherside bias, that is, the judgments that people impute to their counterparts. The key prediction is that adversaries will expect their counterparts to engage in a myside bias of their own, construing the case in a way that is roughly opposite to the adversaries’ own construal. Participants were asked to estimate the other representative’s evaluation of three key variables and to estimate his or her motivation with respect to the outcome of the case. Table 3 shows that the imputed evaluations were significantly skewed by the counterpart’s assignment and were opposite of the participants’ own evaluations. Participants in the Jason assignment condition expected that
the other representative would give higher estimations of the likelihood that Jason stole the money and would view the case as more supportive of the company’s side. Conversely, participants in the company assignment condition expected that the other representative would give lower estimations of the likelihood that Jason stole the money and would view the case as less supportive of the company’s side. Importantly, participants also imputed strong motivations to their counterparts. Participants in the Jason assignment condition expected that the other representative would be highly motivated to see the company prevail while participants in the company assignment condition expected the other representative to be highly motivated to see Jason prevail. Participants in the Jason assignment condition also expected that the other representative would be likely to conclude that Jason stole the money (85.96%, as compared to a rate of 33.33% as offered by the participants themselves, $z = 9.56, p < .001$), whereas participants in the company assignment condition expected that the other representative would be unlikely to conclude that he stole the money (34.69%, as compared to a rate of 52.04% for the participants themselves $z = -2.48, p = .013$).
### Table 3.

Participants’ own evaluations (*myside*) and the evaluations they imputed to the other representative (*otherside*) on 3 key judgments, grouped by the two adversarial assignment conditions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Own judgment (myside)</th>
<th>Other Representative (otherside)</th>
<th>$t$</th>
<th>$df$</th>
<th>$p$</th>
<th>Cohen’s $d$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Likelihood that Jason stole the money</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jason assignment</td>
<td>49.76%</td>
<td>76.75%</td>
<td>11.72</td>
<td>113</td>
<td>&lt;.00</td>
<td>1.08</td>
</tr>
<tr>
<td>Company assignment</td>
<td>58.71%</td>
<td>44.46%</td>
<td>3.914</td>
<td>97</td>
<td>&lt;.00</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Which side does your/other’s view support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jason assignment</td>
<td>5.34</td>
<td>8.85</td>
<td>11.51</td>
<td>113</td>
<td>&lt;.00</td>
<td>1.06</td>
</tr>
<tr>
<td>Company assignment</td>
<td>6.49</td>
<td>4.55</td>
<td>4.5</td>
<td>97</td>
<td>&lt;.00</td>
<td>0.47</td>
</tr>
<tr>
<td><strong>Motivation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jason assignment</td>
<td>5.14</td>
<td>9.39</td>
<td>13.98</td>
<td>113</td>
<td>&lt;.00</td>
<td>1.3</td>
</tr>
<tr>
<td>Company assignment</td>
<td>6.74</td>
<td>3.74</td>
<td>6.675</td>
<td>97</td>
<td>&lt;.00</td>
<td>0.69</td>
</tr>
</tbody>
</table>

*High values indicate judgments that support the company’s position.*
Imagined extremism. As noted above, studies of imagined extremism and false polarization have observed that people tend to exaggerate the judgments that they impute to members of other groups (Keltner & Robinson, 1996; Robinson et al., 1995). Thus, we set out to test whether the evaluations imputed by our participants to the other representative were more extreme than judgments that were actually made by the participants in the opposite assignment condition. We tested this difference for the four measures that Ps were asked to impute to their counterparts, namely, the three overall judgments (the likelihood that Jason stole the money, the counterpart’s decision, and which side would be supported by the counterpart’s view), and the counterpart’s motivation to see the case come out. Of the eight imputed judgments (four for each condition), we found statistically significant support for imagined extremism in six tests.¹

¹ First, with respect to the likelihood that Jason stole the money, we found evidence of imagined extremism when comparing the judgments that participants in the Jason assignment condition imputed to their counterparts (M = 76.74) with the actual judgments made by participants in the Company assignment condition, M = 58.71, t(208) = 5.89, p = .001. There was, however, no difference between judgments that participants in the Company assignment condition imputed to their counterparts (M = 44.46) and the actual judgments made by participants in the Jason representative condition, M = 49.76, t(179) = 1.48, p = 0.14. Second, with respect to the decision (how would you decide the case), we found evidence of imagined extremism when comparing between judgments that participants in the Jason assignment condition imputed to their counterparts (85.96%) and the actual judgments made by participants in the Company assignment condition, 52.04%, z = 5.622, p <0.001. However, we found non significant difference between the judgments that participants in the Company assignment condition imputed to their counterparts (34.69%) and the actual judgments made by participants in the Jason assignment condition, 33.33%, z = -0.207, p = 0.84. Third, with respect to the measure which side was supported by the respective views, there were significant differences between judgments that participants in the Jason assignment condition imputed to their counterparts (M = 8.85) and actual judgments made by participants in the Company assignment condition, M = 6.49, t(199) = 7.17, p < .001, as well as between judgments that participants in the Company assignment condition imputed to their counterparts (M = 4.55) and the actual judgments made by participants in the Jason representative condition, M = 5.34, t(193) = 2.16, p < 0.05. Fourth, with respect to the motivation measure, participants expected their counterparts’ motivation to be more skewed towards their assignment than they really were. There were significant differences between judgments that participants in the Jason assignment condition imputed to their counterparts (M = 9.39) and the actual judgments made by participants in the Company assignment condition, M = 6.74, t(198) = 8.22, p < .001, as well as between judgments that participants in the Company assignment condition imputed to their counterparts (M = 3.75) and actual judgments made by participants in the Jason assignment condition, M = 5.14, t(182) = 3.65, p < .001.
The Coherence Effect. The richness of this experimental stimulus has afforded the opportunity to test for the emergence of coherence along six dimensions. First, we predicted that the inferences drawn from the individual facts would cluster around a coherent construal of the whole case. To test this hypothesis, we subjected the 6 fact questions to an inter-correlational analysis (after reverse coding the innocence items). We found that each of the items correlated significantly with all other items, with coefficients ranging from .25** to .58**, and making a reliable composite (alpha = .76). In other words, participants seemed to have constructed a strong representation that spread the vying conclusions apart by supporting a conclusion of either guilt or of innocence. Second, as seen in Table 4, we observe significant correlations among the three overall judgments of the case: the likelihood that Jason stole the money, the participants’ decision, and their metacognitive assessment of which side of the case is supported by their viewpoint (all correlations greater than $r(292) = .66$). Third, Table 4 shows significant correlations among the four measures of hot cognitions (all correlations greater than $r(292) = .26$). Due to the importance of the motivation construct in the adversarial mindset, we point out its strong interconnectivity with other important facets of the framework. The motivation rating was strongly related to the factual inferences, the estimation of the likelihood that Jason stole the money, and the other hot cognitions, namely, negative emotions towards Jason, positive emotions towards him, and liking of him (coefficients ranging from .21** to .68**). Notably, motivation also correlated with how participants’ would have decided the case themselves, which is another measure that approximates participants’ behavior tendencies. Fourth, we observe significant correlations between the factual inferences and three overall judgments on the one hand (cold cognitions), and participants’ hot cognitions—namely, motivation, negative emotions, positive emotions and liking of Jason—on
the other. Out of these 16 correlation measures, all but one (between positive emotions and the decision) were significant, ranging from .17* to .70**.
Table 4.

*Inter-correlations among key evaluations and hot cognitions (and assignment)*

<table>
<thead>
<tr>
<th>Case Facts</th>
<th>Likelihood of Stealing the money</th>
<th>Decision View Supports</th>
<th>Motivation</th>
<th>Negative Emotions</th>
<th>Positive Emotions</th>
<th>Like Jason</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Facts</td>
<td>1</td>
<td>.76**</td>
<td>.65**</td>
<td>.73**</td>
<td>.63**</td>
<td>.45**</td>
<td>-.19**</td>
</tr>
<tr>
<td>Likelihood of stealing the money</td>
<td>.76**</td>
<td>1</td>
<td>.66**</td>
<td>.79**</td>
<td>.68***</td>
<td>.39**</td>
<td>-.14*</td>
</tr>
<tr>
<td>Decision</td>
<td>.65**</td>
<td>.66**</td>
<td>1</td>
<td>.68**</td>
<td>.51**</td>
<td>.40**</td>
<td>-.06</td>
</tr>
<tr>
<td>View Supports</td>
<td>.73**</td>
<td>.79**</td>
<td>.68**</td>
<td>1</td>
<td>.70**</td>
<td>.41**</td>
<td>-.20**</td>
</tr>
<tr>
<td>Motivation</td>
<td>.63**</td>
<td>.68**</td>
<td>.51**</td>
<td>.70**</td>
<td>1</td>
<td>.40**</td>
<td>-.21**</td>
</tr>
<tr>
<td>Negative Emotions</td>
<td>.45**</td>
<td>.39**</td>
<td>.40**</td>
<td>.41**</td>
<td>.40**</td>
<td>1</td>
<td>.25**</td>
</tr>
<tr>
<td>Positive Emotions</td>
<td>-.19**</td>
<td>-.14*</td>
<td>-.06</td>
<td>-.20**</td>
<td>-.21**</td>
<td>.25**</td>
<td>1</td>
</tr>
<tr>
<td>Like Jason</td>
<td>-.57**</td>
<td>-.59**</td>
<td>-.47**</td>
<td>-.59**</td>
<td>-.57**</td>
<td>-.47**</td>
<td>.26**</td>
</tr>
<tr>
<td>Assignment</td>
<td>.18**</td>
<td>.15**</td>
<td>.15**</td>
<td>.18**</td>
<td>.27**</td>
<td>-.01</td>
<td>.08</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01; *** p < .001

The far reach of the coherence effect is manifested by the positive correlations among the judgments attributed to a third party, a novel finding that can be labeled *imputed coherence*. As seen in Table 5, the judgments that participants imputed to their counterparts cohered with one another.
Table 5.

Inter-correlations among overall judgments imputed to the counterpart

<table>
<thead>
<tr>
<th></th>
<th>Motivation</th>
<th>Likelihood of Cheating</th>
<th>Decision</th>
<th>View Supports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>1</td>
<td>.54**</td>
<td>.38**</td>
<td>.84**</td>
</tr>
<tr>
<td>Likelihood of Cheating</td>
<td>.54**</td>
<td>1</td>
<td>.54**</td>
<td>.60**</td>
</tr>
<tr>
<td>Decision</td>
<td>.38**</td>
<td>.54**</td>
<td>1</td>
<td>.44**</td>
</tr>
<tr>
<td>View Supports</td>
<td>.84**</td>
<td>.60**</td>
<td>.44**</td>
<td>1</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01; *** p < .001

Finally, we sought to explore the interaction between participants’ own judgments and the judgments that they imputed to their counterparts. To test this proposition, we created measures of the differences between the participants’ judgments and the judgments they imputed to their counterparts on the three overall evaluations (likelihood of commission, decision, which side was supported by their view). We then intercorrelated these difference scores and found that all coefficients were highly significant (ranging from .51** to .85**). Once again, we observe the central role played by the motivation measure. The aforementioned difference scores were found to correlate significantly with the participants’ own measure of motivation (coefficients ranging from .37** to .63**). This suggests that the more participants were motivated to see their side win the case, the greater they perceived the discrepancies between the myside and the otherside biases.
The difference scores also correlated with the motivation imputed to the counterparts (coefficients ranging from .38** to .84**), suggesting that the discrepancies between the myside and the otherside biases were related to the motivation levels imputed to the counterpart. The difference scores were also found to be related to the difference between participants’ own motivation and the motivation that they imputed to their counterparts (coefficients ranging from .40** to .85**).

**Perceptions of Objectivity.** Recall that the myside bias predicts that adversaries will hold favorable perceptions of themselves, specifically in this context, of their objectivity. We found that the self-assessments of objectivity were relatively high, with mean evaluations of M = 7.63, which is around the three-quarters mark on the scale that ranged from “highly subjective” to “highly objective.” These objectivity values did not differ among the assignment conditions, F(2, 326) = 1.89, p = .152. The myside bias also predicts that participants assigned to the adversarial conditions will rate the other representative’s objectivity unfavorably. Indeed, participants gave fairly low ratings (M = 5.07) to their counterparts, close to the scale’s mid-point. These evaluations were considerably lower than their self-evaluations, M = 7.63, t(418) = 9.31, p = .001, demonstrating that participants perceived themselves more favorably than they perceived their counterparts. The two measures of objectivity were not correlated to each other, r(210) = .006, p > .1. Next, we examined the imputed reverse perception, that is, how participants expected to be judged by their counterparts. We find that participants expected to be judged relatively unfavorably by their counterparts on the objectivity measure (M = 5.00). This imputed judgment was lower than participants’ judgment of their own objectivity, M = 7.63, t(419) = 9.63, p < .001, and almost identical to the participants’ judgment of their counterpart’s objectivity, M = 5.08, t(422) = -0.25, p = 0.80. The imputed measure of objectivity correlated with participants’ judgments of their counterparts’ objectivity, r(210) = 0.45, p < 0.001. The similarity between the perception of the
counterpart and the reverse perception imputed to the counterpart suggest that participants envisioned a sense of mutual distrust between themselves and the other representative.

**Partial Awareness?** As stated above, our participants displayed a host of biased judgments. It is a well-established observation that biases operate mostly beneath the level of conscious awareness (Ross & Ward, 1995; Wilson & Brekke, 1994). Nonetheless, we sought to explore the extent of this unawareness. In this vein, we probed our participants for their assessment how the case would be viewed through the eyes of a person of authority who was not affiliated to either of the adversarial parties. Our findings suggest that these assessments were noticeably more moderate than the participants’ own judgments. First, recall that when asked how they would decide the case, participants’ responses were found to be significantly influenced by their assignment (see Table 1). Yet, their predictions how the case would be decided by the arbitrator were not significantly influenced by the assignment, assessments of 58.16% (company assignment), 51.75% (Jason assignment), and 50.43% (neutral assignment), Chi-square (2) = 1.43, p = .49. Second, participants’ assessments of how the arbitrator would assess their objectivity were significantly lower than the participants’ judgments of their own objectivity, M = 5.79 v. 7.63 , t(421) = 6.90, p < 0.001. We didn’t find a difference between participants’ assessments of the arbitrator’s evaluations of the other representatives’ objectivity and the participants’ own evaluations of the other representative, M = 5.47 v 5.07, t(421) = -1.42, p = 0.16.

**Discussion.** The results from study 1 provide overall strong support for the adversarial mindset. First, we observe a wealth of evidence for the myside bias. Assignment to either of the adversary sides skewed a wide range of judgments and reactions towards favoring the respective side. These effects were evident in factual inferences drawn and the overall judgments of the case, though the hot cognitive reactions to the case received only partial support. Notably, results from the non-
adversarial condition were close to the middle of the two adversarial assignments. Consistent with the otherside bias, participants in the adversarial conditions imputed to their (fictional) counterparts’ judgments that were biased towards the counterpart’s respective assignment, and were thus opposite to the participants’ own judgments. For the most part, the imputed judgments were more extreme than the actual judgments made by participants in the opposite conditions. All participants reported a relatively favorable perception of themselves. Participants in the adversarial conditions also reported relatively unfavorable perception of their counterparts, and they expected to be judged relatively unfavorably by their counterparts in return. We also observed the pervasive reach of the coherence effect, as evidenced by correlations on numerous dimensions of the task, traversing both the myside and otherside bias, and the discrepancies between the two. Finally, notwithstanding the strength and the pervasive reach of these biases, the study offered suggestive evidence that participants were at least partially aware of the biased nature of their judgments.

Study 2 is designed to replicate the findings of study 1, using a different set of materials and a somewhat different assignment. Importantly, we set out to test the lower boundary conditions of the adversarial mindset. In this vein, we weakened the affiliation between participants and their respective parties by removing any language encouraging participants to advance the respective party’s case. Moreover, we tried to induce participants assigned to adversarial conditions to behave in a non-adversarial manner by urging them to exercise their task (conducting an investigation) in a fair and objective manner. Most of the measures were the same as those used in Study 1.
Study 2

Method

Participants

Participants were recruited in a similar fashion to Study 1. Three hundred ninety-four individuals participated via the Internet. Due to the length and complexity of the materials, we inserted a number of attention checks and memory tests to ensure that the participants were engaged in the task. Following the protocol used in Simon et al. (2015), data from 98 individuals were removed from the analysis: 49 participants for not completing the study within the designated timeframe, and 49 people for misremembering their assignment. This left us with usable data from 296 participants. The sample was 62% female. Participants were all 18 years or older, with an average age of 43. 20% of our sample had only finished high school and the rest had a range from 1 to 8 years of post high school education. Political beliefs ranged from strongly liberal (8%) to moderate (34%) to strongly conservative (8%), with a mean of 6.0 on a 1(strongly liberal) to 11(strongly conservative) scale. In general, this sample had fewer people at the extremes and more moderates than in Study 1. 41% of the sample identified as Democratic, 24% as Independent and 23% as Republican. On a measure of religiosity 1 (not at all) to 11 (strongly religious), the mean response was 6.62, with a distribution that ranged from 19% who said that they were not at all religious (1) to 14% who said they were strongly religious (11). In all, our sample appears to be more diverse than undergraduate samples in terms of age, education, political beliefs, religiosity, and likely also geographical origin. As a result, we expect that our findings are more generalizable than comparable findings obtained from undergraduate samples. None of the demographic variables interacted with the results. The study was approved by the USC Internal Review Board, University Park Campus.
Materials and Procedure

Power considerations. We had an initial sample of 394 individuals. We used attention and memory tests to ensure that participants paid attention to instructions and knew what instructions they had been given. After removing participants who failed these tests, the resulting sample was 296, with three between subject conditions, which gives us approximately 100 participants per condition. As described under Dependent Variables, where relevant we used multi item measures of our constructs. For example, we had thirteen items in our measure of facts, 9 for background beliefs, 3 items for positive emotions and 3 items for negative emotions. In addition, we frequently used several different types of measures of our different constructs, such as Hot Cognitions and Measures of Objectivity.

The study was completed online in a similar fashion to Study 1. The case stimuli were based on a factual pattern used by Simon et al., (2015, studies 3, 4). Participants were asked to imagine that they worked at a state university as an investigator for the Office of Student Disciplinary Affairs. The office is entrusted with investigating allegations of misconduct and, where appropriate, recommending disciplinary actions against the students involved. The duty of the investigator is to prepare an investigative report in preparation for the disciplinary hearing. The disciplinary hearing was centered on an adversarial process, in which a University Representative prosecutes the case, and the student is defended by a Student Representative. The cases are ultimately decided by the university’s Chief Judicial Officer.

The study involved an allegation that a student by the name of Debbie Miller cheated on an exam by copying from her notes in a closed-book exam. Participants were presented with the case information, and asked to make a variety of judgments about it. Participants were never actually asked to write reports. Rather, we probed for their responses on the dependent variables soon after
they received the factual information about the case. All participants received the same case
information and instructions, except for assignment instructions. Again, participants performed the
study alone at the time and place of their convenience.

Assignments. The assignment manipulation consisted of whether participants were assigned to
an adversarial or a non-adversarial role. In the adversarial conditions, participants were informed
that they were to investigate on behalf of one of the parties, while another investigator was assigned
to the opposing party. In the non-adversarial condition, participants were told that they were the
only investigator working on the case and that their role was to facilitate the process.

The role description given to participants assigned to investigate on behalf of the university
(“university assignment”) read as follows:

You are assigned to conduct the investigations on behalf of the university. Another
investigator working opposite you is assigned to conduct the investigations on
behalf of the students. Your reports are crucial for the prosecution of the cases, as
all of the arguments made by the University Representative are based on the
evidence that you provide. Your investigations should be fair and objective. Keep
in mind that it is not your task to adjudicate the cases. Your job is to provide the
University Representative with the information needed to prosecute the cases at the
hearings. The other investigator’s job is to provide the Student Representative with
the information needed to defend the students.

The instructions given to participants who were assigned to investigate on behalf of the student
(“student assignment”) were similar to the university assignment, except that the sides were
reversed.

Participants assigned to the non-adversarial condition (“neutral assignment”) read as follows
(the assignment labels were not mentioned in the materials):

You are the only investigator working on these cases, and the disciplinary hearings
are based entirely on your reports. All the parties involved will be relying on the
information that you provide. Your reports should be fair and objective. Keep in
mind that it is not your task to adjudicate the cases. Your job is to provide the Chief
Judicial Officer and the two representatives with the information to arrive at a fair resolution of the cases.

A seen in these excerpts, all participants were admonished not to adjudicate the case themselves. Their role was limited to the provision of information. Importantly, all participants were instructed to be “fair and objective.”

*Case facts.* The facts pertaining to the alleged cheating were presented in seven webpages. Overall, the case was intricate and ambiguous. From the university files, participants learned that Debbie, a junior, was an “A” student, and was considered hardworking and ambitious, and was employed by one of the professors as a Research Assistant. Debbie was the captain of her high-school volleyball team, which went on to win the state championship. She was awarded an athletic scholarship to play on the college volleyball team, but quit the team in her freshman year after complaining of lower back pain. At high school, she was suspected of cheating on an exam, but there was no information about whether she was disciplined or not.

An interview with the examination room proctor revealed that Debbie sat against a wall, close to the back corner of the room. The proctor noticed that Debbie sat crouched over her papers, as if she was hiding something. At the end of the exam, she noticed that Debbie stuck something into the pocket of her sweater, which later turned out to be a note with a summary of the course. A classmate who sat behind Debbie claimed to have seen her pull out the note from her sweater pocket and copy from it throughout the exam. The course professor reported that Debbie was anxious about the exam, but did not believe that she cheated. Debbie herself denied the allegations adamantly. She stated that as an A student, she had only to lose by cheating. She explained that she crouches when sitting for long periods of time because of a back injury she sustained while playing on the college volleyball team. After receiving the facts of the case, participants were presented with the measures.
Dependent Variables. The variables measured in this study were largely similar to the ones included in Study 1 and were recorded on the same scales. Except where mentioned otherwise, the order of the measures presented here corresponds to the order of the items as they appeared in the materials.

Hot Cognitions. Participants were asked how much they liked Debbie, using both an 11-point Likert scale and a “liking thermometer” on a scale of 0-100. Participants were then asked to report the extent to which they felt three positive emotions (sympathy, compassion, and sorrow) and three negative emotions (anger, scorn, disgust) towards Debbie. These questions were presented in random order. Later in the study, participants were presented with an item intended to gauge their motivation towards the outcome of the case (“Which side would you want to see win this case?”). Participants were also asked to what extent they liked the proctor. Later in the study, participants were asked about the extent to which they identified with Debbie, with the university, and with the proctor. Participants were also probed about the extent to which they trusted the proctor.

Evaluations of the facts of the case and related beliefs. To explore participants’ views of the case, we asked for their evaluation of 13 factual issues that bore on the question of Debbie’s cheating. Some of the items asked for participants’ agreement with statements that suggested that she did in fact cheat on the exam (guilt items). For example, recall that Debbie was seen crouching over her notes during most of the exam. The crouching was interpreted by the proctor as an attempt to conceal the notes, but Debbie insisted that she crouches because of a back injury sustained from playing on the volleyball team. Thus, one of the fact questions asked participants to state their agreement with the following statement: “The fact that Debbie crouched over her papers during the exam indicates that she was hiding something.” Other measures probed for agreement with the conclusion that Debbie did not cheat (innocence items). For example, having been told that this
was the proctor’s (Ms. Simmons) first proctoring assignment with the university and that she was interested in keeping the job, participants were asked to state their agreement with “Ms. Simmons was motivated to catch someone cheating on her first day on the job.” This study went beyond study 1 in that we probed participants also for their background knowledge beliefs pertaining to factual issues involved in the case. In all, nine background belief items were included. For example, participants were asked to state their agreement with: “In general, people who have lower back pain tend to crouch when they sit for extended periods of time.” The fact questions were presented in a randomized order, with the belief questions following the fact questions to which they related.

**Overall Judgments.** To obtain the most direct measure of the myside bias, participants were asked to estimate the likelihood that Debbie cheated on the exam, how would they decide the case, how did they expect the case would be decided by the Chief Judicial Officer, and which side did their view support. Participants were also asked to recommend a disciplinary action against Debbie (if any), by choosing from a list of seven actions ranging from no action at all, through to expulsion from the university.

**Judgments Imputed to the Other Investigator.** To explore the prospect of otherside bias, participants in the adversarial conditions were probed for their beliefs on how the other investigator would view the case. Specifically, they were asked about the other investigator’s judgment of the likelihood that Debbie cheated on the exam, how he or she would decide the case, and which side would her or his opinion favor. This study did not contain a measure of the motivation imputed to the counterpart.

**Judgments of Objectivity.** As in study 1, a total of five measures were used to explore participants’ assessments of objectivity. All participants were asked to assess their own objectivity
and to assess how the Chief Judicial Officer would assess their objectivity. Participants in the adversarial assignments were also asked to report their views on the objectivity of the other representative, how their own objectivity would be judged by the other representative (imputed reverse perception), and how the Chief Judicial Officer would assess the other investigator’s objectivity.

Secondary Hypotheses. Going beyond the framework of the adversarial mindset, we included measures to probe the possibility that the assignment would influence participants’ general beliefs about academic misconduct in general, such as the causes and prevalence of academic dishonesty. The responses to these items tended in the hypothesized direction but, for the most part, were not significant, and will not be discussed further. We also included measures intended for an exploratory probe for participants’ beliefs about investigators’ objectivity and diligence when operating in adversarial and non-adversarial settings. Due to length constraints, these measures will not be discussed further.

Results

In the following analysis, we will compare responses from the three experimental conditions: the two adversarial conditions (“Debbie assignment” and “university assignment”) and the non-adversarial condition (“sole investigator,”). Where the directionality of the measures is not self-evident, we aligned them with the university’s position, so that higher values correspond to greater support with the conclusion that Debbie did in fact cheat on the exam.

Inferences Drawn from the Case Facts. The core measure of the myside bias concerns participants’ construal of the facts of the case. To analyze the data, we reverse coded the innocence
items so that positive values of all questions indicate responses that are consistent with the conclusion that Debbie did cheat. As seen in Table 6, the inferences drawn from facts were indeed influenced by the assignment: participants in the Debbie assignment condition reported less incriminating evaluations of the facts than participants assigned to the university assignment condition, with those assigned to the sole investigator condition giving evaluations that were close to the mid-point between the adversarial conditions. The assignment manipulation pervaded the entire case and seeped into the evaluations of the individual evidence items. For example, participants in the university assignment condition tended to endorse the statement that Debbie crouched because she was hiding something, while participants in the Debbie assignment condition were more likely to reject that proposition. Again, responses in the neutral assignment condition came out between the adversarial conditions.

Further evidence of the participants’ biased construal of the case comes from their ratings of the 9 background belief items, as noted in Table 6. Thus, for example, participants in the Debbie assignment condition were more likely to endorse the belief that in general, people who suffer from lower back pain tend to crouch when they sit for extended periods of time, and participants in the university assignment condition tended to reject that proposition. Again, participants in the neutral assignment condition provided responses that were between the adversarial assignments.

Overall Judgments. Next we examine the effect of the assignment on participants’ overall judgment of the case. Table 6 shows that as expected, the assignment impacted participants’ estimations of the likelihood that Debbie cheated, and judgments of which side of the case their view supports. We found also that the assignment influenced how participants would have decided the case themselves. The percentage of participants who would have decided that Debbie cheated were 23.36%, 37.38%, and 39.51% for the respective conditions, \( \text{Chi-square} (2) = 6.98, p = .03. \)
Table 6

Myside Bias: Participants’ overall judgments of the case

<table>
<thead>
<tr>
<th>Measure</th>
<th>Debbie Assignment</th>
<th>Neutral Assignment</th>
<th>University Assignment</th>
<th>F(2, 293)</th>
<th>p</th>
<th>h^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inferences drawn from the Case Facts*</td>
<td>4.41^a</td>
<td>5.17^b</td>
<td>5.69^c</td>
<td>15.87</td>
<td>&lt;.001</td>
<td>.098</td>
</tr>
<tr>
<td>Background Beliefs*</td>
<td>4.53^a</td>
<td>5.02^b</td>
<td>5.40^c</td>
<td>14.11</td>
<td>&lt;.001</td>
<td>.088</td>
</tr>
<tr>
<td>Likelihood that Debbie Cheated</td>
<td>33.44%^a</td>
<td>42.51%^b</td>
<td>52.78%^c</td>
<td>12.75</td>
<td>&lt;.001</td>
<td>.080</td>
</tr>
<tr>
<td>View support (which side does your view support)*</td>
<td>3.52^a</td>
<td>5.03^b</td>
<td>5.80^b</td>
<td>15.17</td>
<td>&lt;.001</td>
<td>.094</td>
</tr>
</tbody>
</table>

* High values support the university’s position
Means that do not share a common subscript are significantly different at p < .05.

Hot cognitions. As seen in Table 7, the findings supported the prediction that the assignment would influence participants’ hot cognitive reactions to the stimulus. We found that the assignment impacted the liking of Debbie (as measured on the liking thermometer), the composite of negative emotions towards Debbie, and the composite of positive emotions towards her. The assignment also had a mild influence on participants’ liking of the proctor. Importantly, we found that the assignment strongly influenced participants’ motivation, in that those assigned to the Debbie assignment condition were more motivated to see Debbie prevail than those in the university assignment condition with the neutral assignment ratings falling in between.
In response to the identification measures, we observed stronger identification with the university, $M = 5.91$, than with Debbie, $M = 5.35$, or the proctor, $M = 4.83$. These were significantly different across conditions, $F(2, 883) = 11.23$, $p < .001$. Participants in the Debbie assignment reported stronger identification with her, $M = 5.91$, weaker identification with the university ($M = 5.64$), and weaker identification with the proctor, $M = 4.4$, $F(2, 320) = 9.56$, $p < .001$, than did the participants in the university assignment, $M = 4.57$, $M = 6.17$, and $M = 5.06$, respectively, $F(2, 240) = 6.55$, $p < .001$. Participants in the Debbie assignment reported lower levels of trust in the proctor than did participants in the university assignment condition, $M = 5.75$ v. $6.79$, $t(107) = 25.75$, $p < .001$.

**Table 7**

*Myside Bias: Participants’ Hot Cognitions*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Debbie Assignment</th>
<th>Neutral Assignment</th>
<th>University Assignment</th>
<th>$F(2, 292)$</th>
<th>$p$</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liking of Debbie</td>
<td>64.63$^a$</td>
<td>59.91$^{ab}$</td>
<td>55.99$^b$</td>
<td>5.32</td>
<td>&lt; .01</td>
<td>.035</td>
</tr>
<tr>
<td>Negative Emotions towards Debbie</td>
<td>3.06$^a$</td>
<td>3.50$^{ab}$</td>
<td>3.99$^b$</td>
<td>3.885</td>
<td>&lt; .05</td>
<td>.026</td>
</tr>
<tr>
<td>Positive Emotions towards Debbie</td>
<td>6.78$^a$</td>
<td>6.03$^b$</td>
<td>5.43$^b$</td>
<td>6.9</td>
<td>&lt; .001</td>
<td>.045</td>
</tr>
<tr>
<td>Liking of the proctor</td>
<td>46.05</td>
<td>50.21</td>
<td>53.21</td>
<td>4.33</td>
<td>&lt; .05</td>
<td>.029</td>
</tr>
<tr>
<td>Motivation*</td>
<td>3.72$^a$</td>
<td>4.58$^b$</td>
<td>5.67$^c$</td>
<td>11.34</td>
<td>&lt; .001</td>
<td>.072</td>
</tr>
</tbody>
</table>
* High values support the university’s position
Means that do not share a common subscript are significantly different at p < .05.

Evaluations Imputed to the Other Investigator. The second pillar of the adversarial mindset pertains to the otherside bias, that is, the judgments that people impute to their counterparts. The key prediction is that participants will expect their counterparts to engage in a myside bias of their own, construing the case in a way that is roughly opposite to the participants’ own evaluations. In this vein, we asked the participants assigned to the adversarial conditions to estimate the other investigator’s evaluation of three key variables: the likelihood that Debbie cheated, how the counterpart would have decided the case, and which side would be supported by the other investigator’s construal. As predicted, we found that all three imputed judgments were significantly skewed towards the counterpart’s assignment. Table 8 shows that the imputed evaluations were significantly influenced by the counterpart’s assignment and were opposite of the participants’ own evaluations. Participants in the Debbie assignment condition expected that the other investigator would give higher estimations of the likelihood that Debbie cheated, would be more likely to decide that she cheated, and would view the case as more supportive of the university’s side. Conversely, participants in the university assignment condition expected that the other investigator would give lower estimations of the likelihood that Debbie cheated, would be less likely to decide that she cheated, and would view the case as less supportive of the university’s case.
Table 8.

Participants’ own evaluations (myside) and the evaluations they imputed to the other investigator (otherside) on 3 key judgments, grouped by the two adversarial assignment conditions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Own judgment (myside)</th>
<th>Other Representative (otherside)</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likelihood that Debbie cheated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student assignment</td>
<td>33.44%</td>
<td>62.05%</td>
<td>-</td>
<td>107</td>
<td>&lt;.001</td>
<td>1.035</td>
</tr>
<tr>
<td>University assignment</td>
<td>52.78%</td>
<td>45.42%</td>
<td>2.313</td>
<td>80</td>
<td>&lt;.05</td>
<td>.257</td>
</tr>
<tr>
<td>Which side does your/other’s view support*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student assignment</td>
<td>3.52</td>
<td>7.56</td>
<td>-</td>
<td>107</td>
<td>&lt;.001</td>
<td>1.124</td>
</tr>
<tr>
<td>University assignment</td>
<td>5.80</td>
<td>4.06</td>
<td>3.95</td>
<td>79</td>
<td>&lt;.001</td>
<td>.442</td>
</tr>
</tbody>
</table>

* High values support the university’s position
Imagined extremism. To test the imagined extremism hypothesis, we again explored whether evaluations imputed by our participants to the other representative were more extreme than the judgments that were actually made by the participants in the opposite assignment condition. We tested this difference for the three measures that participants were asked to impute to their counterparts, namely, the likelihood that Debbie cheated, the counterpart’s decision, and which side would be supported by the counterpart’s view. Of the six tests (three for each condition), three provided statistically significant support of the imagined extremism hypothesis, two were nonsignificant but tended in the correct direction and one was significant in the unexpected direction.²

The Coherence Effect. Study 2 also afforded the opportunity to test for the emergence of coherence along a wide range of dimensions. First, we predicted that participants’ views of the individual facts would cluster around a coherent construal. To test this hypothesis, we subjected the 13 fact questions to an inter-correlational analysis (after reverse coding the innocence items). We found that with one non-significant exception, all items correlated significantly with all other

² First, we examined whether imagined extremism was present in the judgments of the likelihood that Debbie cheated: we found a predicted difference when comparing between judgments that participants in the university condition imputed to their counterparts (M = 45.42) versus actual judgments made by participants in the Debbie condition (M = 33.44), t(187) = 2.887, p = .0043, and judgments that participants in the Debbie condition imputed to their counterparts (M = 62.05) versus actual judgments made by participants in the University condition (M = 52.78), t(187) = 2.2297, p = .027. Second, with respect to the decision about guilt, there was no significant difference between the judgments that participants in the University condition imputed to their counterparts (27.16%) versus the actual judgments made by participants in the Debbie condition (23.36%), z-score = -0.5956, p = .55, while there was a significant difference between judgments that participants in the Debbie condition imputed to their counterparts (63.88%) versus the actual judgments made by participants in the University condition (39.51%), z-score = -3.3279, p = 0.0009. Third, with respect to the judgment about which side the participants’ views supported, there was no significant difference between judgments that participants in the University condition imputed to their counterparts (M = 4.06) versus actual judgments made by participants in the Debbie condition (M = 3.52), t(186) = 1.291, p = .198, while there was a significant difference between the judgments that participants in the Debbie condition imputed to their counterparts (M = 7.56) versus the actual judgments made by participants in the University condition (M = 5.80), t(186) = 3.8045, p = .0002.
items, with coefficients ranging from .10** to .66**, making a reliable composite ($\alpha = .88$). In other words, the evaluations revealed a globally coherent structure that tended to view the factual pattern as supporting either a conclusion of Debbie’s innocence or of her guilt. The emergence of a globally coherent view of the case is further supported by the fact that the 9 background belief items formed a coherent composite ($\alpha = .60$). The somewhat weaker alpha score for the background beliefs is understandable given that background knowledge is deemed to be more stable than ad hoc factual inferences. Notably, the composite measure of the background beliefs correlated significantly with the composite measure of the factual inferences, $r(294) = .79$, $p < .001$. Second, as seen in Table 9, we observe significant correlations among the three overall judgments of the case: the likelihood that Debbie cheated, the participants’ decision, and their assessment of which side of the case is supported by their viewpoint (coefficients ranging from .62** to .78**). Third, we find significant correlations among the four measures of hot cognitions (coefficients ranging from .22** to .62**). As in study 1, we note the centrality and interconnectivity of the motivation construct to the adversarial mindset. The motivation rating was strongly related to the factual inferences $r(189) = .724**$ and background beliefs, $r(189) = .664**$, the estimation of the likelihood that Debbie cheated, $r(188) = .773$, as well as with the other hot cognitions, namely, negative emotions towards Debbie, $r(188) = .497**$, positive emotions towards her $r(188) = -.598***$, and liking of her $r(188) = -.608***$. The motivation rating was strongly related also to how participants’ would have decided the case themselves, which is another measure that approximates participants’ behavior tendencies, $r(189) = .761**$. 
Table 9.

Inter-correlations among key evaluations and hot cognitions (and assignment)

<table>
<thead>
<tr>
<th></th>
<th>Case Facts</th>
<th>Likelihood of Cheating</th>
<th>Decision</th>
<th>View Supports</th>
<th>Motivation</th>
<th>Negative Emotions</th>
<th>Positive Emotions</th>
<th>Like Debbie</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Facts</td>
<td>1</td>
<td>.76**</td>
<td>.62**</td>
<td>.73**</td>
<td>.72**</td>
<td>.56**</td>
<td>-.55**</td>
<td>-.61**</td>
<td>.31**</td>
</tr>
<tr>
<td>Likelihood of cheating</td>
<td>.76**</td>
<td>1</td>
<td>.73**</td>
<td>.78**</td>
<td>.77***</td>
<td>.56**</td>
<td>-.49**</td>
<td>-.59**</td>
<td>.28**</td>
</tr>
<tr>
<td>Decision</td>
<td>.62**</td>
<td>.73**</td>
<td>1</td>
<td>.76**</td>
<td>.76**</td>
<td>.48**</td>
<td>-.42**</td>
<td>-.49**</td>
<td>.14*</td>
</tr>
<tr>
<td>View Supports</td>
<td>.73**</td>
<td>.78**</td>
<td>.76**</td>
<td>1</td>
<td>.87**</td>
<td>.51**</td>
<td>-.52**</td>
<td>-.60**</td>
<td>.30**</td>
</tr>
<tr>
<td>Motivation</td>
<td>.72**</td>
<td>.77***</td>
<td>.76**</td>
<td>.87**</td>
<td>1</td>
<td>.50**</td>
<td>-.60**</td>
<td>-.61**</td>
<td>.33**</td>
</tr>
<tr>
<td>Negative Emotions</td>
<td>.56**</td>
<td>.56**</td>
<td>.48**</td>
<td>.51**</td>
<td>.50**</td>
<td>1</td>
<td>-.22**</td>
<td>-.51**</td>
<td>.16**</td>
</tr>
<tr>
<td>Positive Emotions</td>
<td>-.55**</td>
<td>-.49**</td>
<td>-.42**</td>
<td>-.52**</td>
<td>-.60**</td>
<td>-.22**</td>
<td>1</td>
<td>.66**</td>
<td>-.21**</td>
</tr>
<tr>
<td>Like Debbie</td>
<td>-.61**</td>
<td>-.59**</td>
<td>-.49**</td>
<td>-.60**</td>
<td>-.61**</td>
<td>-.51**</td>
<td>.66**</td>
<td>1</td>
<td>-.19**</td>
</tr>
<tr>
<td>Assignment</td>
<td>.31**</td>
<td>.28**</td>
<td>.14*</td>
<td>.30**</td>
<td>.33**</td>
<td>.16**</td>
<td>-.21**</td>
<td>-.19**</td>
<td>1</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01; *** p < .001

The coherence effect is manifested also in the judgments that participants impute to their counterparts (imputed coherence). As seen in Table 10, the three overall judgments imputed to the counterpart were all significantly correlated. Finally, we sought to explore the interaction between participants’ own judgments and the judgments that they imputed to their counterparts. To test this proposition, we created measures of the differences between the participants’ three overall judgments (likelihood of commission, decision, which side was supported by their view) and the
same judgments imputed to their counterparts. We then intercorrelated these difference scores and found that all coefficients were highly significant (ranging from .17** to .24**). Once again, we observe the central role played by the motivation measure. The aforementioned difference scores were found to correlate significantly with the participants’ own measure of motivation (coefficients ranging from .04** to 21**). This suggests that the more participants were motivated to see their side win the case, the greater the discrepancies between the myside and the otherside biases.

**Table 10.**

*Inter-correlations among overall judgments imputed to the counterpart*

<table>
<thead>
<tr>
<th></th>
<th>Likelihood of Cheating</th>
<th>Decision</th>
<th>View Supports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likelihood of Cheating</td>
<td>1</td>
<td>.38**</td>
<td>.27**</td>
</tr>
<tr>
<td>Decision</td>
<td>.38**</td>
<td>1</td>
<td>.26**</td>
</tr>
<tr>
<td>View Supports</td>
<td>.27**</td>
<td>.26**</td>
<td>1</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01; *** p < .001

*Perceptions of Objectivity.* Recall that the myside bias predicts that adversaries will hold favorable perceptions of themselves, in this context, of their objectivity. We found that the self-assessments of objectivity were relatively high, with a mean evaluation of 7.95, which is around the three-quarters mark of the scale. These evaluations did not differ among the assignment conditions, F(2, 291) = .02, p = .981. The myside bias also predicts that participants assigned to
the adversarial conditions will rate the other representative’s objectivity unfavorably. Indeed, participants gave relatively low ratings (M = 6.41) to their counterparts, close to the scale’s mid-point. These evaluations are considerably lower than the participants’ judgments of their own objectivity, t(185) = 6.80, p < .001, demonstrating that participants perceived themselves more favorably than they perceived their counterparts. The two measures of objectivity were significantly correlated to each other, r(186) = .329**. In sum, participants held relatively positive views of themselves, but relatively negative views of their adversary. Next, we examined the imputed reverse perception, that is, how participants expected to be judged by their counterparts. Consistent with our prediction, participants expected to be perceived by their counterparts as relatively biased (M = 6.24). This imputed measure of objectivity was lower than the participants’ judgment of their own objectivity, M = 6.24 vs 7.97, t(185) = 8.46, p < .001, but was almost identical to the participants’ judgments of the adversary’s objectivity, M = 6.26 vs 6.41, t(186) = .69, p = .49, suggesting that the participants conjured up a schema of mutual distrust between themselves and their adversaries. Moreover, the pair of judgments were positively correlated, r(186) = .401**, so that the stronger the bias that participants attributed to their counterpart, the more they expected to be judged as being biased in return.

*Partial Awareness?* Again, we sought to explore the possibility that participants were not entirely unaware of their biased view of the case. The study finds that participants’ assessment of how a person of high authority would view the case were noticeably more moderate than the participants’ own judgments. First, recall that when asked how they would decide the case, participants’ responses were found to be significantly influenced by their assignment (see Table 6). Yet, while their predictions how the case would be decided by the Chief Judicial Officer trended in the direction of the assignments, these effects were not significant (assessments of 36%, 43%,
and 47% for the respective conditions, Chi-square (2) = 2.31, p = .32). Second, participants’ assessments of how the Chief Judicial Officer would judge their objectivity were significantly lower than the participants’ judgments of their own objectivity, M = 7.36 v. 7.97, t(293) = 4.725, p < .001. Finally, participants’ assessments of the Chief Judicial Officer’s evaluations for the other investigators’ objectivity were higher than the participants’ own evaluations of them, M = 6.82 v. 6.41, t(186) = -2.12, p = .036.

**Discussion.** Despite the weaker experimental treatment, the results from study 2 largely mirror those of study 1. For one, the results provide support for the myside bias. Assignment to either of the adversary sides skewed a wide range of judgments and reactions towards favoring the respective side. These effects were evident in the factual inferences drawn and in the overall judgments of the case, and the predictions regarding the hot cognitive reactions to the case were confirmed (as compared the partial findings in study 1). The assignment also increased the extent to which participants identified with their respective side. Notably, results from the non-adversarial condition were close to the middle of the two adversarial assignments. Consistent with the otherside bias, participants in the adversarial conditions imputed to their (fictional) counterparts judgments that were biased towards the counterpart’s respective assignment and thus opposite to the participants’ own judgments. For the most part, the imputed judgments were more extreme than the actual judgments made by participants in the opposite conditions. All participants reported a relatively favorable perception of themselves. Participants in the adversarial conditions also reported relatively unfavorable perception of their counterparts, and they expected to be judged relatively unfavorably by their counterparts in return. We also observed the pervasive reach of the coherence effect, as evidenced by interactions on 6 dimensions of the task, traversing both the myside and otherside bias, and the discrepancies between the two. Finally, notwithstanding the
strength and the pervasive reach of these biases, the study offered suggestive evidence that participants were at least partially aware of the biased nature of their judgments.

**General Discussion**

This project set out to present a comprehensive theoretical framework to capture the psychological experience of participating in competitive contests. We began by proposing that the mindset consists of three pillars: a myside bias, which captures a wide range of judgments, emotions and motivations, all of which converge on supporting one’s position; the novel construct of the otherside bias, which captures judgments that an adversary imputes to his or her counterpart; and a behavioral dimension that flows from these two biases and which tends to escalate the conflict. Seeking to capture the comprehensive experience of partaking in an adversarial contest, the framework encompasses an array of findings observed across a range of fields of psychological research and which are typically presented, understood, and treated as disjointed observations. The framework seeks to offer a unifying theoretical framework for these seemingly disparate phenomena, conceiving them as instantiations of the myside and otherside biases. We then proceeded to test this framework, focusing primarily on the first two pillars. The key observations stemmed from comparing between participants who were affiliated with the opposing parties of the adversarial contest, and comparing those groups to participants who were assigned to a non-adversarial role. To increase the reliability of this empirical exploration, we conducted two structurally similar studies that included similar sets of measures, using different case materials, different role assignments, and different degrees of affiliation with the parties to the contest. The wide scope of measures produced a rich set of findings that, in our view, provides solid empirical support for the theoretical framework. We also tested the prediction that coherence based
reasoning would provide the cognitive mechanism for understanding the high interconnectivity within and between the myside bias, the otherside bias, and the escalatory tendency.

Summary of Findings

In support of the central feature of the myside bias, we found that the assignment pervaded the inferences drawn from the factual basis of the contest in a manner that supported the assigned side. In study 1, participants assigned to represent Jason Wells tended to interpret the six pieces of evidence in a way that supported the conclusion that Jason was not the one who stole the money from the company’s safe, while participants assigned to represent the company interpreted the same facts as supporting the opposite conclusion. Likewise, in Study 2, participants assigned to investigate the allegation of academic misconduct on behalf of Debbie Miller tended to interpret the 13 factual matters in a way that portrayed the incident as honest behavior rather than academic misconduct, and participants assigned to investigate the case on behalf of the university were more likely to provide factual interpretations that supported the alleged misconduct. Importantly, in both studies, participants who were given non-adversarial assignments offered construals that were close to the mid-point of the inferences made in the adversarial conditions.

Strong support for the myside bias was obtained also from the measures probing the respective groups’ overall judgments of the case. Participants assigned to represent Jason expressed low estimations of the likelihood that Jason was the thief, reported a strong inclination to decide it in Jason’s favor, and expressed the metacognitive belief that their view of the case provided stronger support for Jason’s side of the dispute. Participants in the company assignment condition reported opposite evaluations. Similarly, in Study 2, participants in the Debbie assignment condition expressed low estimations of the likelihood that Debbie cheated, were more inclined to decide the
case in her favor, and felt that their view of the case offered strong support for Debbie’s side of the dispute. Participants in the university assignment condition reported opposite evaluations. Again, in both studies, the judgments made by participants assigned the non-adversarial role were between the ones rendered by the two adversarial groups.

The predictions with respect to the arousal of hot cognitions received only partial support in Study 1. In study 2, the assignment had the predicted impact on liking of Debbie, the negative emotions towards Debbie, the composite of positive emotions towards Debbie, and liking of the proctor. Importantly, both studies provide strong and significant evidence for the impact of the assignment on participants’ motivation with respect to the outcome of the case, in that participants assigned to the adversarial conditions were motivated to see their assigned party prevail. Again, the levels of motivation reported by participants in the neutral assignment conditions were around the mid-point of the values reported in the adversarial conditions. Study 1 did not support the prediction that the assignment would impact on participants’ sense of identification with their assigned party, though that prediction was significant in study 2.

Both studies provide considerable support for the otherside bias. Notably, the judgments that participants imputed to their counterparts were starkly different from their own judgments. We observed the hypothesized differences between the two sets of estimations with respect to the likelihood that Jason and Debbie committed the respective transgressions, the decision regarding the transgressions, and the assessments of which side of the case was supported by the respective views. So, for example, participants in the Debbie assignment condition expected that the other investigator would give high estimations of the likelihood that she cheated, would be strongly disposed to decide that she cheated, and would view the case as strongly supportive of the university’s side. Participants in the university assignment condition imputed opposite estimates
to their counterparts. A similar pattern was observed in study 1. Notably, the results provided overall support for the imagined extremism prediction, in that the judgments imputed to the counterparts were generally more extreme than the responses actually provided by participants assigned to those opposing conditions. Importantly, study 1 also found that participants expected their counterparts to be strongly motivated to see their respective side prevail in the case (this measure was not included in Study 2).

Both studies found evidence to support the predicted character evaluations that participants would make about themselves and about their counterparts. Specifically, participants assessed their own objectivity fairly highly, but gave relatively low assessments of objectivity to their counterparts. We also found the predicted effects when probing for the imputed reverse perception, that is, by examining how participants expected to be judged by their counterparts on the objectivity measure. Both studies show that participants expected to be judged unfavorably, at levels that were almost identical to the participants’ judgments of their counterparts. The similarity between the lowly perception of the counterpart and the lowly reverse perception imputed to the counterpart suggest that participants envisioned a sense of mutual distrust between themselves and their counterparts.

In sum, the myside bias and the otherside bias seem to come together to form a powerful and intricate mindset. Across both sides of the adversarial divide, our participants seemed to develop a self-serving mental model consisting of a biased construal of the case and a largely opposite mental model imputed to their counterparts, all overlaid with flattering assessments of their own objectivity, unfavorable assessments of their counterparts, and unfavorable imputed reverse perceptions. The biased perceptions and the mirroring perceptions that adversaries impute to their
counterparts are bound to instigate and energize a recursive interplay of biases, perceived biases, and escalatory conduct.

It should be acknowledged that we do not know the ground truth as to whether Jason Wells stole the money from the company safe or whether Debbie Miller cheated on the exam. Thus, we cannot determine whether any one group of participants made correct judgments and whether the others were incorrect. Still, we believe that it is telling that the adversarial treatments did have a slew of impacts that consistently supported the position of the respective sides. It is also telling that the non-adversarial treatment resulted consistently in values that were in between the adversarial treatments, typically, close to the midpoint. Thus, while we remain agnostic about the absolute correctness of our participants’ judgments, we feel comfortable stating that the adversarial assignments had an appreciable biasing effect. This conclusion is consistent with findings from other studies, conducted in both laboratory and naturalistic settings, as described in the Introduction.

It is notable that all these effects were driven by a minimalistic treatment in a mundane, non-incentivized and presumably non ego-involving task. Participants were informed that they were assigned to play a marginal role in the process and that they would not be expected to actually decide the case. Moreover, in study 2, all participants were explicitly instructed to be fair and objective. The effect borne by this weak affiliation is reminiscent of findings made in the minimal group paradigm (Billig & Tajfel, 1973; Brewer, 1979), and by early studies on role theory (Ferguson & Kelley, 1964. See also Blake & Mouton, 1962).
Escalatory Behavior

A central upshot of the foregoing analysis is to better understand and explain human behavior in adversarial situations. Indeed, the third pillar of the adversarial mindset framework concerns behavioral implications. Given that our participants performed the study by themselves, in a single setting, we could not conduct a direct test of adversarial behavior. Hence, we look at psychological constructs that are likely to mediate one’s behavior in adversarial settings.

A leading predictor of people’s behavior is their construal of the situation they face. The skewed construals observed in our studies are bound to lead adversaries to believe in the rightness of their side and to operate from a state of optimistic overconfidence (Ross & Ward, 1995). The self-serving construal of the situation is likely to be exacerbated by the concomitant liking (or disliking) of the protagonists and the arousal of emotions (negative or positive) towards them. Given that both studies dealt with alleged wrongdoing, we observed a marked arousal of anger towards the protagonists. Heightened states of anger have been found to trigger reactive and punitive decisions (Lerner, Small, & Loewenstein, 2004; Loewenstein & Lerner, 2003), harsher social judgments (Lerner, Goldberg, & Tetlock, 1998; Goldberg et al., 1999; Ohbuchi, Tamura, Quigley, Tedeschi, Madi, Bond, & Mummendey 2004), and more personified judgments of blame (Keltner, Ellsworth, & Edwards, 1993).

The motivation variable warrants special attention in adversarial contexts. For one, motivation is likely to further skew the construal of the situation. A large body of research has demonstrated the impact of motivation on reasoning and decision-making (Kunda, 1990). Habitually, people construe their environments to comport with their motivations (Ditto, Munro, Apanovitch, Scepansky, & Lockhart, 2003; Munro, Ditto, Lockhart, Fagerlin, Gready, & Peterson, 2002; Wyer & Frey, 1983). Second, it is well established that motivation has a direct effect on behavior
(Fishbein & Ajzen, 2011; Higgins, 1998). Recall that in our studies, all groups of adversarial participants expressed the wish to see their respective party prevail. Notably, the motivation measure was significantly correlated with all the measures of both hot and cold cognitions, as well as with the global disparity between the myside and the otherside biases (as manifested by the difference scores between the participants’ overall judgments and the judgments they imputed to their counterparts). These findings give reason to expect that the participants would be prone to behave in a manner that advanced the cause of their affiliation.

Escalation can also stem from the perception that one’s counterpart is biased, a view that was reported by the participants assigned to the adversarial conditions in both studies. As noted by Gordon Allport, the perception of bias has a “functionally autonomous” potential to nourish and inflate adverse judgments of that person (Allport, 1937). Newcomb (1947) and Dawes et al. (1972) have similarly observed that the mere perception of bias can escalate competitive behavior. This proposition received empirical support by Kennedy and Pronin who found that when faced with counterparts whom they believed to be biased, participants reacted in a more competitive and aggressive manner (Kennedy & Pronin, 2008, 2012).

One should also keep in mind the dynamic nature of adversarial competitions. Any escalatory gesture by either party can readily stoke escalatory tendencies in the counterpart. For example, Kennedy and Pronin (2008) found that participants were more likely to escalate the conflict once they encountered competitive behavior from their counterpart (Kennedy & Pronin, 2008, 2012). People in competitive situations tend to project their own escalatory orientations unto their opponents (Kelley & Stahelski, 1970a), and these initial beliefs are then updated as the competitor’s behavior is observed. Competitive behavior can trigger competitive reactions even
from opponents who are inclined to engage in cooperative behavior (Fehr & Schmidt; 2006; Kelley & Stahelski, 1970b).

Blind Spot Bias, Imagined Extremism, and Schemas of the Adversary

One of the key features of the adversarial mindset is participants’ perceptions of themselves and of their counterparts. Our findings raise four issues in this regard. First, our participants reported favorable perceptions of themselves—in this context, of their perceived objectivity. Judgments of objectivity can be important in adversarial settings because they tend to embolden one’s trust in one’s judgments. As predicted by naïve realism (Ross & Ward, 1995), our participants conceived of themselves as being relatively objective even as their construal of the case was skewed by the adversarial assignment. In other words, the self-perception of objectivity was unfounded. Second, our participants expected their counterparts to be biased. Coupled together, these findings manifest a bias blind spot (Pronin et al., 2002, 2004). Third, our participants reported their expectation that they would be judged unfavorably by their counterparts on the objectivity measure. These judgments were considerably lower than the participants’ judgments of themselves and were very similar to the judgments they made of their counterparts. This pairing of unfavorable judgments amounts to an expectation of mutual distrust, which is bound to hinder the prospects of conciliatory behavior. This finding of expected mutual distrust is consistent with research on cross-group perception in situations of intergroup conflict (Bar-Tal, 1990; Sherif et al., 1961).

Fourth, our participants reported their expectations of their counterparts’ responses on three key overall judgments of the case, and in Study 1, also of their counterparts’ motivation with respect to the outcome of the case. These measures were found to be consistently and substantially
opposite from the participants’ own judgments. Moreover, we found that the judgments imputed to the adversary were for the most part unduly extreme, in that they were more strongly aligned with the counterpart’s assignment than the judgments that were actually made by participants in the opposing treatment conditions. Thus, our participants engaged in imagined extremism (Keltner & Robinson, 1996). The discrepancy between adversaries’ biased judgments and the extreme opposite judgments they impute to their counterparts is bound to lead adversaries to perceive a wide gulf separating the parties.

In our view, the current findings go beyond the extant findings of the bias blind spot (Pronin et al., 2002, 2004; Ross & Ward, 1995) and imagined extremism (Keltner & Robinson, 1996). Recall that our findings were triggered by a mere affiliation to a random party in a fictional dispute and in opposition to a non-existent counterpart. In other words, we created the adversarial relationship from scratch, using only a minimalistic and incentive-less adversarial setup. The divide separating our participants could not be said to emanate from entrenched attitudes or ingrained adverse beliefs about the opposing groups, such as would be expected on opposite sides of the Israeli-Palestinian conflict (Ehrlinger et al. 2005), the affirmative action debate (Ehrlinger et al. 2005; Kennedy & Pronin, 2008), cultural identity (Frantz, 2006); the abortion debate (Kennedy & Pronin, 2008; Robinson, et al, 1995), the Iraq war (Kennedy & Pronin, 2008), and racial issues (Robinson, et al, 1995). Thus, we suggest that our studies bring us closer to the minimal boundary conditions for triggering the blind spot bias and imagined extremism (see Billig & Tajfel, 1973; Brewer, 1979).

In all, our participants generated rather elaborate predictions as to how their counterparts would evaluate and decide the case, their motivation, their objectivity, and their reversed perception of objectivity. In short, our participants seem to have deployed a schema by which their counterparts
were expected to be biased, extreme, untrustworthy, and distrusting. This schema can have far reaching impacts on the process. It is not difficult to appreciate how such a perception would serve as a discouragement for a forthright and costly process of compromise. As discussed above, adverse expectations—whether real or imagined—can readily color the interpretation of the adversary’s actions and predispose one towards competitive behavior.

It is worth noting that the judgments of the counterparts were made absent any knowledge about that person. Participants conducted the experiment online, at the time and place of their convenience, and without any coordination with other participants. This setup made it patently clear that the other investigator was merely a fictional character. Yet, our participants seemed to have had little difficulty in conjuring up a schema of that fictitious foil. At first blush, this conjecturing seems thoughtless, irrational, and utterly baseless. But criticizing our participants on this account would be missing a deeper point. It must not be overlooked that these seemingly cartoonish judgments and imputations were, on the whole, correct. The expectation that the counterpart would be partial to her assignment was confirmed in both studies by the simple fact that participants in both adversarial conditions were indeed partial to their assignment. Likewise, the expectation that one’s counterpart would not be objective was borne out by the fact that participants in both conditions were indeed partial, and the expectation that the counterpart would engage in a reverse bias was borne out by the fact that participants in both conditions did indeed judge their counterparts to be biased. In short, the otherside bias imputed by the participants in one condition was confirmed by the myside bias displayed by participants assigned to the opposite condition, and vice versa. This is a telling feature of the adversarial mindset: the reflexively and thoughtlessly conjured schemas of a biased, untrustworthy and distrusting counterpart are by and large justifiable plainly because people on both sides of an adversarial divide tend to be biased,
untrustworthy and distrusting. Still, the findings of imagined extremism suggest that these schemas tend to be more extreme than the person they seek to portray.

One of the intriguing findings of these studies pertains to the question of awareness to bias. While it is broadly accepted that biases operate beneath the level of conscious awareness (Wilson & Brekke, 1994), our findings suggest the observed biases were not necessarily absolute or impenetrable. Recall that we asked our participants to predict the judgments of the case made by a person of authority who was presumed to be neutral (the arbitrator in study 1 and the Chief Judicial Officer in study 2). It is notable that participants’ predictions of those official’s decisions were only faintly affected by the assignment (Study 2) or not affected by it at all (Study 2). Participants in both studies also expected that the official would evaluate themselves less favorably than they viewed themselves and would evaluate their counterparts more favorably than they did themselves. In all, while participants displayed strong and pervasive myside and otherside biases, they seemed to be somewhat aware that not everyone would share their biased views. This finding indicates the possibility that our participants had some awareness that they were operating under the influence of bias.

Coherence Based Reasoning

Our studies also shed light on the basic-psychological process that underlies these results. In particular, we set out to test whether the cognitive basis for the adversarial mindset could be provided by the coherence based reasoning framework (Glöckner & Engel, 2013; Glöckner, Hilbig, & Jekel, 2014; Holyoak & Thagard, 1989; Read, Vanman, & Miller, 1997, Thagard, 2000, 2019; Reid & Simon, 2012, Simon & Holyoak, 2002, Simon & Read, 2018). A notable feature of our findings is the strong and widespread interactions amongst the many values measured in these
studies. This pattern demonstrated a globally coherent view of the case, manifesting significant interactions across and within the various measures. Specifically, we observed evidence of the coherence effect along six dimensions of the task.

First, consistent with prior research, we found that the inferences drawn from the individual facts clustered around a coherent construal and made for a reliable composite. In other words, participants seemed to have constructed a strong representation that spread the vying conclusions apart by interpreting the facts as supporting a conclusion of either guilt or of innocence. Second, we observed significant correlations among the three overall judgments of the case: the likelihood that Jason and Debbie engaged in the transgression, the way in which the participant would decide the case, and the metacognitive judgment of which side of the case their viewpoint supports. These observations provide further evidence of the spreading apart of the representation into two lopsided vying subsets, a hallmark of coherence based reasoning (Glöckner & Engel, 2013; Simon, 2004a; Simon & Spiller, 2016. See also Brownstein, 2003; Russo, Carlson, Meloy, & Yong, 2008; Svenson, 1992).

Third, consistent with the findings made by Simon et al. (2015), study 2 revealed significant correlations among the four measures of hot cognitions, the liking of the protagonists, the negative and positive emotions towards them, and the motivation to see the case come out in a particular manner. The findings pertaining to the hot cognitions were mixed in study 1. Notably, in both studies, participants’ motivation correlated with how they would have decided the case themselves, which is another measure that approximates participants’ behavior tendencies. Fourth, we observed significant correlations between the factual inferences and three overall judgments on the one hand and the participants’ hot cognitions—namely, motivation, negative emotions, positive emotions and liking of the protagonists.
The far reach of the coherence effect is manifested by the fifth dimension of analysis, among the judgments attributed by the participants to their counterparts. We found significant correlations among the imputed likelihood of commission, the decision imputed to the counterpart, and the metacognitive judgments of which side would be supported by the counterpart’s view of the case. This novel finding of imputed coherence suggests that people expect coherence to emerge in other people’s representation of complex tasks, with potential implications for how people understand other people’s minds. Finally, we examined the relationship between participants’ myside and otherside biases. We found that the differences between the participants’ three overall judgments (likelihood of commission, decision, which side was supported by their view) and the same judgments imputed to their counterparts were all significantly intercorrelated. These difference scores also correlated significantly with the participants’ own measure of motivation, suggesting that the more participants were motivated to see their side win the case, the greater the discrepancies between the myside and the otherside biases.

The strength and depth of the coherence effect was demonstrated also by the measures of the background knowledge that were included in study 2. Consistent with prior studies (Simon et al., 2004b, 2015), we observed the predicted coherence driven shifts in the background beliefs that undergird the factual inferences. The clustering of these beliefs suggests that the spreading of coherence seeped deep into the participants’ mental representation of the case and altered the familiar relationship between background knowledge and ad hoc judgments (e.g., Snyder, 1984). Consistent with the connectionist architecture that underlies the coherence effect, this relationship appears to run also in the unfamiliar—and arguably inverse—direction: from inferences to background knowledge.
Most pertinent to the adversarial mindset, we observed that the adversarial assignments effectively swayed the entire mental representations of the situation towards the conclusion that supported the respective assignment (see Engel & Glöckner, 2013; Simon et al. 2004b, study 4). This finding is consistent with circuitous effects observed in other coherence studies. For example, when choosing between job offers, manipulating the location of one of the places of employment can sway the evaluation of all the other features of the job offers (e.g., the salary, the commute time), despite the fact that the items were unrelated to one another (see Simon et al., 2004a, 2015; Simon & Spiller, 2016). When deciding a case of libel, manipulating the valence of the character of a protagonist sways assessments of unrelated items, such as inferences drawn from the facts of the case and the application of a legal rule to the situation (Holyoak & Simon, 1999). Similar effects were observed in deciding the case of Jason Wells, where manipulating the key eyewitness’s level of confidence influenced unrelated factual judgments (Simon et al., 2004b) and hot cognitions (Simon et al., 2015, study 2). In all, it follows that coherence-based reasoning can serve as a useful cognitive framework for understanding the breadth and depth of the adversarial mindset.

Legal Applications

As mentioned, the proposed framework highlights some of the structural regularities that can be expected to be found in competitive situations writ large. The following section explores exemplary legal contexts that are bound to trigger the adversarial mindset and examines the mindset’s likely impact on the outcome of those processes.
1. Negotiations

A major implication of the adversarial mindset is its potential to impact negotiations, whether performed to complete a business transaction, resolve a legal dispute, or any other attempt to transform conflicting interests into a mutually agreed state of affairs. Recall that in the Introduction we surveyed seven forms of suboptimal behavior that have been revealed by the research on negotiation behavior. We contend that each one of these behaviors can be explained by the adversarial mindset framework. The tendency to overestimate the strength of one’s case and to be unduly overconfident in the prospect of prevailing (Allwood, & Granhag, 1999; Bazerman et al., 2000; Goodman-Delahunty et al., 2010; Neale & Bazerman, 1985) can be understood as driven by the myside bias’ skewed construal of the contest. The tendency to view one’s case as more just and fair than the opponents’ (Babcock, et al., 1995; Loewenstein et al., 1993) can be understood as driven by a combination of the key components of the myside bias: the biased construal of the contest, the favorable perception of oneself, and the unfavorable perception of one’s opponent. The tendency to view the parties’ respective positions as inherently incompatible (Thompson, 1995; Thompson & Hastie, 1990) and the zero-sum approach to the possible outcomes (De Dreu et al., 2000; Deutch, 1977; Neale & Bazerman, 1991; Raiffa, 1982; Thompson & Hrebec, 1996) are a likely function of the vast chasm that separates the myside and the otherside biases. The frequent failure to view the situation through the perspective of one’s counterpart (perspective taking; see Carroll et al., 1988; Galinsky et al., 2008) is a likely product of imagined extremism. Reactive devaluation, by which parties reflexively distrust and disfavor proposals put forth by the counterpart (Oskamp, 1965; Ross & Stittinger, 1991) is the likely product of the otherside bias, mutual distrust, and imagined extremism. Finally, the tendency to escalate conflict (Carnevale & Pruitt, 1992; de Dreu et al., 2015; Deutsch, 1977, 2008; Kelman, 2008) can be understood as the
combined force of the entire framework, including the biased construal of the contest, the polarized perceptions of oneself and of one’s counterpart, the imagined extremism and the hot cognitions that accompany this self-serving mindset. The escalatory tendency that stems from the adversarial mindset is manifested by a series of studies that utilize archival data to show that litigants conducting settlements negotiations often misjudge the eventual award of their case, and thus litigate cases that they should settle (Gross & Syverud, 1991; Kiser, Asher, & McShane, 2008; Rachlinski, 1996). These litigants are financially hurt by both misjudging the prospect of their case and by the ensuing litigation costs. Most likely, these errors are driven at least in part by the adversarial mindset.

Traces of the adversarial mindset can be gleaned also from the interventions that mediators use to sway litigants from pursuing lawsuits (Korobkin, 2006a, 2006b). Notably, mediators ask litigants to list the weaknesses of their case and to enumerate reasons why they might lose in court. Mediators also expose litigants to the arguments of the other side, they highlight the weaknesses in the litigants’ case, and articulate scenarios by which the outcome could diverge sharply from the party’s expectations and predictions. These methods can be understood as ways to loosen the grip of the adversarial mindset, that is, to challenge the myside and otherside biases, thus tempering the inclination to escalate the conflict.

2. Litigation

There is reason to expect that the adversarial mindset will also impact litigants and lawyers engaged in litigation (for the sake of brevity, we will focus on the latter). Adversarial advocacy is deemed an essential component of the Anglo-American legal system. Adversarial advocacy is believed—correctly, in our opinion—to fuel the diligence required for building a case and stoke the zeal required for presenting it effectively (see Fuller, 1971; Wigmore, 1923). But under some
conditions, the concomitant mindset could compromise the lawyer’s performance. For one, it seems that in order to build and present a case effectively, lawyers ought to perform a sound evaluation of the factual and legal terrain to reach a realistic assessment of the strengths and weaknesses of their case. A realistic reading of the situation is essential also for counseling clients about their legal situation and available courses of action. When gripped by the adversarial mindset, providing an evenhanded assessment might be a difficult feat. A naturalistic study conducted with practicing lawyers across the United States found evidence of unduly optimistic forecasts: while 24% of lawyers exceeded their minimal expectations, 44% fell short of meeting them (Goodman-Delahunty, Granhag, Hartwig, & Loftus, 2010). This result is consistent with findings that adversarial affiliations cloud participants’ ability to provide objective assessments even in the face of monetary incentives (Engel and Glöckner, 2013; Loewenstein, Issacharoff, Camerer, & Babcock, 1993). As mentioned above, archival studies indicate that parties negotiating in advance of litigation tend to misjudge the eventual award of negotiated cases and thus proceed to engage in costly and mistaken litigation (Gross & Syverud, 1991; Kiser et al., 2008; Rachlinski, 1996). These errors are bound to occur also, and perhaps more intensely, once the litigation has begun and additional expenses have been incurred (Staw & Fox, 1977).

Moreover, even when it comes to courtroom advocacy, there is reason to question whether a zealous mindset is an unmitigated good. Zeal might cloud the mind of the advocate, undermining their sensitivity to the sensibilities of their audience and blinding them to the weaknesses of their argument. A field study conducted with law students participating in a moot court program found that the stronger they believed in the superiority of the side to which they were (randomly) assigned, the worse they performed in the trials (Eigen & Listokin, 2012).
3. Expert Testimony

Our findings give reason to expect that the testimony offered by expert witnesses stand to be influenced by the fact that they are retained by or affiliated with one of the parties to an adversarial contest. Indeed, the tendency of expert witnesses to testify in favor of their retaining party has long been a source of lamentation (Hand, 1901; Wigmore, 1923). This phenomenon is currently captured by the concepts of role-induced bias (Eigen & Listokin, 2012; Engel & Glöckner, 2013; Spamann, in preparation) and adversarial allegiance (Murrie & Boccaccini, 2015; Murrie, Boccaccini, Guarnera, & Rufino, 2013). The latter has been demonstrated in a series of archival studies that examined the testimony offered by clinical psychologists assigned to perform psychological assessments in the course of actual criminal proceedings: as compared to experts hired by the defense, experts hired by the prosecution tended to score defendants substantially higher on measures of psychopathy and predictions of criminality (Edens, Cox, Smith, DeMatteo, & Sorman, 2015; DeMatteo, Edens, Galloway, Cox, Smith, et al., 2014; Murrie, Boccaccini, Turner, Meeks, Woods, et al., 2009). The biased nature of expert testimony has also been demonstrated in an ecologically valid experimental setting (Murrie, Boccaccini, Guarnera, Rufino, 2013). It follows that in court, fact finders will often be presented with either one skewed expert testimony or with two discrepant, possibly contradictory, expert testimonies. There is reason to question whether sharp conflicting presentations—which can seem cacophonic from the perspective of lay jurors—is the optimal way to determine truth (see MacCoun, 2015; Mnookin, 2008; Thibaut & Walker, 1979).

One might argue that the effects any such bias will be undermined via the testimony of an opposing expert and the rigorous cross-examination by the opposing lawyer. Indeed, under some conditions, opposing expert testimony and cross-examination can serve as powerful tools to neuter
biased testimony. But that conception is highly dependent on the parity in skill and resources available to the parties. In reality, one party might not be able to afford an expert, or have access to a less qualified or less persuasive expert, or be represented by a lawyer who is less competent and knowledgeable than his counterpart. Thus, under a variety of circumstances, the adversarial process will fail to ferret out the ill effects of biased expert testimony. Such disparities might explain the astounding prevalence of forensic testimony in criminal settings despite the almost universal absence of scientific validation, as well as flawed testing procedures, overstated conclusions and even blatant misconduct (National Research Council, 2009).

4. Police investigations

One potential implication of the adversarial mindset pertains to criminal investigations, especially as conducted by American law enforcement agencies. One might view the police as entrusted with performing neutral objective investigations, much like the National Transportation Safety Board investigates a plane crash or the Center for Disease Control investigates the outbreak of an epidemic. In actuality, police investigations are typically conducted from a somewhat adversarial vantage point, with the goal of bringing the case against the suspect to a successful prosecution. As the investigation progresses and the evidence mounts against the target suspect, detectives come to perceive themselves as increasingly affiliated with the prosecution (Richman, 2003). The investigative endeavor gradually drifts from a search for truth towards constructing the case for the prosecution (Leo, 2008; McConville, Sanders, & Leng, 1991). This conception was captured the United States Supreme Court reference to officers being “engaged in the often competitive enterprise of ferreting out crime” (Johnson v. US, 1948, p. 14).

The quasi-adversarial role conception has the potential to lead police investigators to construe the case through the prism of the adversarial mindset. It follows that they might be prone to view
the evidence as more incriminating than it truly is (Garrett, 2011; Simon, 2012), beliefs that can then skew the production of subsequent evidence (Kassin, Bogart & Kerner, 2012; Simon, 2012). Ominously, investigators beset by the adversarial mindset might venture towards the pitfalls of Noble Cause Corruption (Klockers, 1985), and even the deliberate offering of false testimony, a practice known as *testilying* (Slobogin, 1996. See also Skolnick, 1982). Indeed, it is notable that the two leading contributing factors in the known false convictions are misconduct by law enforcement officers and prosecutors, and perjury and false accusation (National Registry of Exonerations). In a hypothetical world, the effect of this adversarial skew could be mitigated by a parallel investigation conducted on behalf of the defendant. Invariably, however, criminal investigations are conducted exclusively by the police, which leaves fact finders with just one, possibly skewed, version of the facts.

**Concluding Remarks**

It is not hard to see how the web of biases involved in the adversarial mindset come together to normalize, rationalize and justify competitive behaviors that tend to lead, in turn, to the prolongation and escalation of the conflict. By virtue of its general nature, the framework cannot be expected to capture the indeterminate interactions with all moderating variables that could possibly obtain across situations involving different contests, with different stakes, among different personality types who share different histories. Under some conditions, the phenomena observed here might be tempered or eliminated by context specific features. But recall that our findings were driven by paper-thin manipulations in mundane and virtually stake-less tasks. Thus, there is reason to believe that our results underestimate the intensity of adversarial contests as they are likely to occur in the real world, when tangible stakes hang in the balance. Negotiating over a
multi-million dollar deal or litigating over grandma’s estate with an estranged cousin are bound to evoke deeper and more intense engagement than could be expected from our minimal experimental setup.

Yet, it must be acknowledged that not all conflicts escalate ad infinitum, as many are resolved before one side vanquishes the other or before the costs of maintaining the conflict become prohibitive (Deutsch, 2008). Among the various explanations for the prospect of de-escalation, we note the possibility that biased reasoning is not entirely impenetrable (cf. Wilson & Brekke, 1994). Notwithstanding the wide and deep spreading of bias throughout the participants’ mental model of the case, our participants were considerably less biased when asked to assess how a neutral authority figure would view the case. In other words, our participants were cognizant of the fact that not everyone would share their view of the situation. It follows that they were to some degree aware that they were operating under the influence of bias. This partial awareness could provide an opening to bring adversaries to transcend their biased views, question their escalatory impulses, and seek cooperative solutions.
References:


National Registry of Exonerations (contributing factors: [https://www.law.umich.edu/special/exoneration/Pages/ExonerationsContribFactorsByCrime.aspx](https://www.law.umich.edu/special/exoneration/Pages/ExonerationsContribFactorsByCrime.aspx)).


