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Bounded Awareness: Focusing Failures in Negotiation

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Recent reviews have documented a shift over the last 25 years in the study of negotiation toward the decision-making process of the negotiator (Bazerman, Curhan, & Moore, 2000a; Bazerman, Curhan, Moore, & Valley, 2000b; Neale & Fragale, chapter 3; Neuberg & Fiske, 1987; Thompson & Fox, 2000). The decision perspective to negotiation has highlighted important ways in which negotiator judgment falls systematically short of rationality. This paper is broadly compatible with this perspective, but highlights an underexplored aspect of the judgmental failure—how decision makers and negotiators systematically ignore valuable information that is readily available.

Recent research in social and cognitive psychology has documented the ability of the human mind to focus on specific information while failing to incorporate other information that is readily available and relevant. We use this literature to integrate what we know about this failure, and organize this knowledge under our organizing construct of “bounded awareness.” We define bounded awareness as an individual’s failure to “see” and use accessible and perceivable information while “seeing” and using other equally accessible and perceivable information.

We believe that bounded awareness is relevant to both individual decision making and negotiation. Thus, after reviewing the decision perspective to negotiation, we develop the individual decision-making aspect of bounded awareness before identifying the specific application of the concept to negotiation. We conclude by suggesting future research directions on bounded awareness in negotiation.

A DECISION PERSPECTIVE TO NEGOTIATION

We date the decision perspective to negotiation with Howard Raiffa’s classic 1982 work, *The Art and Science of Negotiation*. In contrast to game theory, which assumed the presence of fully rational negotiators, Raiffa (1982) argued for the

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importance of developing a prescriptive approach to improving negotiator effectiveness based on a realistic description of the behavior of the other side. Raiffa's notion that negotiation advice should be based on analysis implicitly acknowledged that negotiators themselves do not intuitively follow purely rational strategies. From an empirical perspective, Raiffa opened a dialogue between prescriptive and descriptive researchers. Along with other work in the decision perspective of negotiation (Bazerman, Neale, Valley, et al., 1992; Thompson & Fox, 2000), we aim to continue this dialogue by empirically identifying psychological patterns that inform the negotiator about his or her own behavior and the behavior of his or her opponents (Bazerman, 2005; Neale & Bazerman, 1991; Thompson & Fox, 2000).

The decision perspective to negotiation seeks to understand how negotiators actually make decisions, with a specific focus on the systematic ways in which decision makers deviate from optimality or rationality (Hastie & Dawes, 2001; Kahneman & Tversky, 1979; Tversky & Kahneman, 1974). Behavioral decision researchers assume that people attempt to act rationally, but are bounded in their ability to achieve rationality (Simon, 1957). Researchers predict, *a priori*, how people will make decisions that are inconsistent, inefficient, and based on normatively irrelevant information. A core argument is that humans rely on simplifying strategies or cognitive heuristics (Bazerman, 2005). While these heuristics are typically useful short cuts, they also lead to predictable mistakes (Tversky & Kahneman, 1974).

To provide a flavor of this research, studies of two-party negotiations suggest that negotiators tend to be

- More concessionary in a negotiation that is positively framed than in a negotiation that is negatively framed (Bazerman Magliozi, & Neale, 1985; Bottom & Studt, 1993; De Dreu & McCusker, 1997; Lim & Carnevale, 1995; Olekalns, 1997)
- Inappropriately affected by anchors in negotiation (Kahneman, 1992; Northcraft & Neale, 1987; Ritov, 1996; Thompson, 1995; Whyte & Sebenius, 1997)
- Overconfident and overly optimistic about the likelihood of attaining outcomes that favor themselves (Bazerman, Moore, & Gillespie, 1999; Bazerman & Neale, 1982).

They also tend to

- Falsely assume a “fixed pie” and miss opportunities for mutually beneficial tradeoffs between the parties (Bazerman et al., 1985; Fukuno & Ohbuchi, 1997; Thompson & DeHarppport, 1994; Thompson & Hastie, 1990)
- Falsely assume incompatibility in the preferences of negotiating parties (Thompson & Hrebec, 1996)
- Escalate conflict even when a rational analysis would dictate a change in strategy (Bazerman, 2005; Bazerman & Neale, 1983; Diekmann,

Tenbrunsel, & Bazerman, 1999; Diekmann, Tenbrunsel, Shah, Schroth, & Bazerman, 1996; Dijksterhuis, Macrae, & Haddock, 1999; Keltner & Robinson, 1993)

- Overweight interpretations of a dispute in ways that favor themselves (Babcock & Loewenstein, 1997; Bazerman & Neale, 1982; Diekmann, Samuels, Ross, & Bazerman, 1997)
- Reactively devalue any concession that their opponent makes (Curhan, Neale, & Ross, 1999; Ross & Stillinger, 1991)

In the 1990s, research emerged that added social psychological variables to research structures consistent with a behavioral decision research perspective. The judgment of individual negotiators is influenced by social context (G. F. Loewenstein, Thompson, & Bazerman, 1989), how social relationships within dyads can influence negotiation processes and outcomes (McGinn, Thompson, & Bazerman, 2003), and how relationships affect the broader network of actors (Shah & Jehn, 1993; Sondak & Bazerman, 1989; Tenbrunsel, Galvin, Neale, & Bazerman, 1996). Most people view themselves, the world, and the future in a considerably more positive light than reality can sustain (Taylor, 1989; Taylor & Brown, 1988) and that this behavior generalizes to the negotiation context (Kramer, Newton, & Pommerenke, 1993; Messick, Bloom, Boldizar, & Samuelson, 1985). In addition, emotions can affect the wisdom of decisions. For example, positive moods tend to increase negotiators' tendencies to select a cooperative strategy (Forgas, 1998) and enhance their ability to find integrative gains (Carnevale & Isen, 1986). Angry negotiators are less accurate in judging the interests of opponent negotiators, achieve lower joint gains (Allred, Mallozzi, Matsui, & Raia, 1997), and are more self-centered in their preferences than control subjects (G. F. Loewenstein et al., 1989). Pillutla and Murnighan (1996) found that angry negotiators are more likely to reject profitable offers than control subjects in ultimatum games.

The decision perspective has also been enhanced by an understanding of how negotiators define the negotiation game. Specifically, Bazerman et al.'s (2000a; 2000b) overview describes how concerns about ethics, values, and norms of fairness affect the negotiator's definition of the game being played; the role of different forms of communication in the way the game is played; the impact of cross-cultural issues in perception and behavior on the negotiation game; and how negotiators cope with making decisions in negotiations involving more than two players.

A key feature of the decision perspective to negotiation is its reliance on a backdrop of rationality for assessing decisions. This feature is central to transforming descriptive research into useful prescriptions. Specifically, it gives the negotiator useful hints about the likely behavior of opponents and suggests ways in which the individual's own decisions may be biased. Consistent with these values, we aim to push the decision perspective in a new direction.

Specifically, we argue that (a) negotiators demonstrate "bounded awareness" when they systematically overlook critical, easily accessible information relevant to their negotiations; (b) we can identify the conditions under which bounded awareness is most likely to occur as well as the types of information most commonly

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ignored by negotiators in those conditions; and (c) we can train negotiators to more effectively broaden their awareness to include useful information. Before developing this argument within the domain of negotiation, we will offer background on bounded awareness at the individual level. In the next section, we define what we mean by bounded awareness, summarize relevant evidence from a broad array of literatures, and, on the basis of this evidence, propose that “focusing failures” are most likely to occur under certain predictable conditions.

EVIDENCE FOR BOUNDED AWARENESS AND FOCUSING FAILURES

Herbert Simon offered the concept of bounded rationality as a “behavioral model [in which] human rationality is very limited, very much bounded by the situation and by human computational powers” (1983, p. 34). Boundedness has since come to represent the distinction between economists’ normative and psychologists’ descriptive views of human decision making. Thaler (1996, 2000) extended Simon’s thinking when he described the three ways in which “Homo Economicus” and “Homo Psychologicus” vary; he argued that people are “dumber, nicer, and weaker” than classical economic theory predicts (1983, pp. 227, 230). That is, Thaler proposed that human beings are characterized by bounded rationality, self-interest, and will power into the equation. Chugh, Bazerman, and Banaji (2005) apply the concept of boundedness to ethical decision making, using the term “bounded ethicality” to describe the systematic constraints on decision making with ethical consequence.

Here, we argue that people have “bounded awareness” that prevents them from focusing on easily observable and relevant data. That is, bounded awareness is the phenomenon by which individuals do not “see” and use accessible and perceivable information during the decision-making process, while “seeing” and using other equally accessible and perceivable information. Thus, useful information remains out of focus for the decision maker. A “focusing failure” results from a misalignment between the information needed for a good decision and the information included in the decision-making process. Our less formal definition of a focusing failure is captured in the familiar “How could I miss that?” reaction to the realization that important information, despite being easily seen, has been ignored. We are deliberate and normative in our labeling of these instances as failures, as they represent costly errors. Researchers are just beginning to understand the systematic effects caused by our bounded awareness, particularly within the negotiation domain, but we can, and will, demonstrate suboptimality based on negotiators systematically ignoring important information. We will argue that the focusing failures that arise from bounded awareness are indeed quite costly to negotiators.

We propose four conditions that correspond to the types of information or tasks that compete for the decision maker’s attention and most likely to lead to a focusing failure. Specifically, we will describe evidence of focusing failures that occur when the decision maker is faced with (a) another task competing for

attention; (b) a seemingly clearly defined primary task with narrow default assumptions; (c) affective information; or (d) information with self-relevance. The evidence we present is deliberately diverse in domain but shares the characteristic of being important, easily seen information that is ignored and that elicits the "How could I miss that?" reaction if and when the focusing failure is recognized.

The Condition of a Competing Task: Inattentional Blindness

Ulric Neisser (1979) asked participants to observe a video of two visually superimposed groups of players passing basketballs. In the video, one group of players wears white shirts and the other group wears dark shirts. Study participants were instructed to count the number of passes between members of one of the two groups. The task is moderately difficult, and study participants had to give it their full attention. Only 21% of Neisser's study participants reported seeing a woman who clearly and unexpectedly walked through the basketball court carrying an open umbrella. Our own experience using this video in the classroom is that even far fewer than 21% of students notice the woman. Yet when the video is shown again to demonstrate what most of the class missed, everyone sees the woman. Essentially, by focusing on one task, people miss very obvious information in their visual world. Simons and Chabris (1999) replicated this effect with a more contemporary video in which a person in a gorilla costume walks through a basketball game, thumping his chest, and is clearly and comically visible for more than 5 seconds. Simons provides a series of such demonstrations on a video available at www.viscog.com.

The common failure to see the obvious is surprising to many people, including the authors, and far exceeds most of our assumptions about visual awareness. Investigating the relationship between perception and attention, Mack and Rock (1998) demonstrate that people have a broad tendency to not see what they are looking at directly when they are focused on a different issue. This failure, known as "inattentional blindness," is nicely summarized in Mack and Rock (1998) and in the work of Daniel Simons and colleagues (Simons, 2000; Simons & Chabris, 1999; Simons & Levin, 2003). Mack (2003) suggests the implications of inattentional blindness for the airplane pilot who, attending to the controls, fails to see another airplane on his runway. Similarly, many car accidents undoubtedly result from drivers focusing on matters other than driving, such as talking on their cell phones. Often, the driver has the needed information visually available, but the attention to the person on the other end of the line keeps the driver from appropriately giving attention to the critical information that affects road safety.

Psychologists are conducting interesting research that connects inattentional blindness to neural regions in the brain (C. M. Moore & Egeth, 1997) and that identifies key independent variables that affect the probability of not seeing the obvious (Mack, 2003). Here, we ask whether inattentional blindness generalizes from the visual world to the broader array of information that is readily available in the environment, yet overlooked by most decision makers, including negotiators.

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As we later develop, we think that many negotiators often act close to rationally based on the information in their mental representation of the negotiation. However, due to inattentional blindness, they fail to act rationally as a result of not even assessing information that failed to be mentally represented.

The Condition of Narrow Assumptions

Dan Gilbert, Tim Wilson, and their colleagues (Gilbert & Wilson, 2000; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000) use the term “focalism” to describe a related set of errors in human judgment. Focalism describes the tendency to focus too much on a particular event (the “focal event”) and too little on other events that are likely to occur concurrently (Wilson et al., 2000). As a result, individuals overestimate the degree to which their thoughts will be occupied by the focal event and to overestimate the duration of their emotional response to the event. For example, people tend to overestimate the impact on their overall happiness of good and bad events (Wilson et al., 2000). Thus, we expect to be more affected emotionally than we really are when our preferred sports team or political candidate wins or loses, or when we are afflicted by a major medical condition.

Schkade and Kahneman (1998) use the term “focusing illusion” to describe the tendency of individuals making judgments to attend to only a subset of available information, to overweight that information, and to underweight unattended information. Using a causal mechanism very similar to that of Gilbert, Wilson, and colleagues, Schkade and Kahneman (1998) examined judgments of life satisfaction. They surveyed college students in the Midwest and southern California about their own life satisfaction and perceived life satisfaction of others. While Californians and Midwesterners reported a similar level of life satisfaction, when both groups were asked to rate the life satisfaction of a similar person living in the other location, both groups rated Californians as having greater life satisfaction than Midwesterners. That is, they found that differences between California and the Midwest, such as climate, strongly influenced nonresidents’ judgments of residents’ life satisfaction but did not predict the experienced life satisfaction of the citizens of the two locales. Schkade and Kahneman (1998) observe that when these citizens are asked specifically about the other location, weather is a salient factor in their responses, and all other life events affecting satisfaction swim out of focus.

The widespread human tendency to focus on certain events and ignore other events available in the environment also emerged in the basketball study of Fox and Tversky (1998). When the 1995 National Basketball Association championship series was down to eight teams, Fox and Tversky recruited basketball fans as subjects. The subjects were asked to assess the probability that each team (Chicago, Indiana, Orlando, New York, Los Angeles, Phoenix, San Antonio, and Houston) would win the championship, the probability that the winning team would come from each of the four divisions (Central [Chicago and Indiana], Atlantic [Orlando and New York], Pacific [Los Angeles and Phoenix], and Midwest [San Antonio and Houston]). They were also asked to assess the probability that the winning team would come from either the Eastern conference (comprising

the Central and Atlantic divisions) or the Western conference (comprising the Pacific and Midwest divisions). Logically, the sum of the probabilities for the eight teams, the sum of the probabilities of the four divisions, and the sum of the probabilities for the two conferences should each add up to 100%. Indeed, the combined probabilities for the two conferences were close—102%. But the sum of the probabilities of the four divisions rose as high as 144%, and the sum of the probabilities of the eight teams was as much as 218%. Building off Tversky and Koehler's (1994) support theory, Fox and Tversky argue that as participants focus on each team, they can find support for that team winning while failing to focus on data that supports other teams winning. This conclusion parallels Tversky and Koehler's finding that medical doctors, when asked to assess the probabilities of four mutually exclusive prognoses for a patient, gave probabilities for the four diagnoses that totaled far in excess of 100%.

Research on creativity can also be understood from the perspective of focusing and narrow assumptions. Many well-studied creativity problems have the essential characteristic of being obvious once you see the solutions. These problems often are structured to put one set of features in focus and to put necessary features of the problem out of focus. People enact an overly narrow focus, often induced by the problem's presentation, and this narrow focus becomes the core barrier to solution (Thompson & Fox, 2000; Winklegren, 1974). Certain conditions, such as positive mood (Amabile, Barsade, Mueller, & Staw, 2002) and less time pressure (Amabile, Hadley, & Kramer, 2002) have been found to contribute to the flexible interpretation, divergent thinking, and greater ingenuity that is lacking in thinking characterized by bounded awareness. This research may offer possible prescription for negotiators seeking to reduce focusing failures.

The Condition of Affective Primacy

Loewenstein (1996) discusses the role of visceral influences on behavior. He highlights the essence of the conflict that people feel when choosing between alternative courses of action—e.g., following what you want in the short term versus what would be best for you in the long term. Loewenstein (1996) argues that much human behavior is based on these sorts of visceral or transient responses that conflict with long-term self-interest.

More recently, Slovic, Finucane, Peters, and MacGregor (2002) coined the term “affect heuristic” to describe the rapid and automatic feelings that precede cognition and that often determine behavior. Loewenstein (1996) and Slovic et al. (2002) share the view that people often act on a limited set of data that prompts an affective response that cuts off cognitive deliberation. These reviews provide compelling evidence that “hot” affective responses are immediate, powerful, and often lead to the failure to consider a broader set of information that is often useful to a rational assessment. These authors argue against the common behavioral decision perspective in which people conduct an approximation of a rational assessment that is affected by a predictable set of biases. Rather, these authors argue that we are predictably influenced by affective considerations that are in focus while other cognitive considerations remain out of focus.

The Condition of Self-Relevant Information

Magicians rely heavily on the human mind's propensity for an overly narrow focus by relying on "misdirection" tactics to manipulate an audience's focus (Schneider, 2004). Misdirection can take many forms, but the type most relevant to our argument happens literally right before the audience's eyes. In this style, the audience looks directly at the "trick" part of the magic as it takes place, seeing everything needed to demystify the illusion, and yet fails to see the motions used to generate "magic."

The magician accomplishes such misdirection through techniques as simple as asking a question of the audience that requires self-relevant mental processing. That is, at precisely the moment of illusion the magician asks a casual question that relates to the trick being performed and requires the audience members to focus briefly on themselves (such as "Why did you select that card?" or, when performing a trick called The Matrix, asking "Does anyone know what a matrix is?"). The question shifts the awareness of each member of the audience from the magician's motions to an issue related to himself or herself; this shift leads them to fail to focus on information right before their eyes.

Chugh, Bazerman, and Banaji (2005) propose a view of unethical behavior that relates well to the bounded awareness and focusing concepts. In other work, these authors (Banaji, Bazerman, & Chugh, 2003) explore how ethical people can nonetheless end up engaging in stereotyping, favoring their own group, being affected by conflicts of interest, and overclaiming credit. We argue that, in ethical contexts, a self-serving set of interpretations comes into focus, often leaving an objective assessment of the situation out of focus. (D. A. Moore, Loewenstein, Tanlu, & Bazerman, 2005) argue that in conflicts between acting in one's self-interest and acting ethically, self-serving options come into focus more naturally than do ethical concerns, which often involve other parties. Thus, we argue that ethical concerns are often out of focus rather than consciously ignored by the decision maker, whose focus is more likely drawn to concerns about the self.

What Focusing Is Not

On a surface level, bounded awareness overlaps with the better-known concept of availability (Tversky & Kahneman, 1974). Both concepts consider why certain information is more salient to the decision maker than other information. But, unlike the concept of bounded awareness, availability is a general cognitive heuristic; it explains the tendency for people to assume that more available information, such as vivid data, is more common than less available information. Research on bounded awareness, by contrast, examines specific conditions and identifies the specific groups of variables likely to be in or out of focus under each condition. Thus, the work on inattentional blindness demonstrates that leading people to focus their attention on a particular task blinds them to quite obvious and relevant information. Gilbert and Wilson (2000) and their colleagues (Wilson et al., 2000) and Schkade and Kahneman (1998) show that asking how specific events affect satisfaction leads to an overestimation of those events, which are in focus, while leaving other

unmentioned events out of focus. Later, we will identify the specific variables that tend to be in and out of focus in negotiations, variables that would not be obvious from even a sophisticated knowledge of the availability heuristic.

Cutcher-Gershenfeld and colleagues (2004) use the term focusing in their prescriptive work on collective bargaining. In this model, focusing is a critical stage that is needed between the act of exploring options with the other side and reaching an agreement. Focusing is a deliberate and collective act of narrowing the pool of possible agreements, and represents a normative view of a negotiation. In our use of the term, focusing failure is a descriptive term. However, the stage that precedes “focus” in the Cutcher-Gershenfeld et al. model, exploration, is the very stage where we believe bounded awareness is likely to occur.

BOUNDED AWARENESS IN NEGOTIATION

Negotiators are overly affected by readily available information and are not aware of this influence on their decisions (Neale, 1984; Pinkley, Brittain, Neale, & Northcraft, 1995). In this section, we outline a framework for identifying which information can be predicted to be out of focus in negotiation. Much of this section is based on empirical work by Tor and Bazerman (2003) and Idson, Chugh, Bereby-Meyer, et al. (2004), and provides preliminary empirical support for our speculative claims about the conditions under which focusing failures are likely to occur.

Both Tor and Bazerman (2003) and Idson et al. (2004) identify the failure of competitive actors to focus on critical information known to be needed for negotiation effectiveness—the decisions of other parties and the rules of the game they are playing. This empirical work uses variations of three well-studied decision problems: the Monty Hall game (Friedman, 1998; Nalebuff, 1987), the Acquiring a Company problem (Ball, Bazerman, & Carroll, 1991; Carroll, Bazerman, & Maury, 1988; Samuelson & Bazerman, 1985), and Multi-Party Ultimatums (Messick, Moore, & Bazerman, 1997). In all three games, individuals typically make the wrong decision, although the games require no complex analytical reasoning. To overview the evidence from this research, we provide a summary of these experimental games. We also provide five problems used to study these three games in the appendix and encourage readers unfamiliar with this work to try to solve the five problems before reading further.

The Monty Hall Game In the once-popular television game show *Let's Make a Deal*, host Monty Hall would ask contestants to choose one of three doors. One of the doors led to a grand prize and the other two, known as “zonks,” led to minor prizes or gag gifts. After the contestant chose a door and before it was opened, Monty would open one of the other two doors to reveal a zonk. The contestant then had the chance to trade their chosen door for the remaining unchosen, unopened door. Most contestants assumed that, with only two doors remaining, the odds of winning the grand prize are 50-50, and most of them preferred to stick with the door they originally chose.

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Years after *Let's Make a Deal* went off the air, statisticians, economists, and journalists (Nalebuff, 1987; Selvin, 1975; vos Savant, 1990, 1991) analyzed contestants' decisions and noted that, in tending not to switch to the remaining unchosen door, they were making a systematic mistake. Assuming that Monty always opened an unchosen door (we will call this the "Monty always opens" condition) and then offered a switch, contestants should always have taken him up on it (Friedman, 1998; Nalebuff, 1987). The logic is simple. When they first choose their door, the contestants have a 1/3 chance of winning the prize. When Monty opens one unchosen door to reveal a zonk, there is still a 1/3 chance that the contestant chose the winner to start with and a 2/3 chance that the big prize is behind one of the other two doors. With one zonk revealed, the unopened, unchosen door now carries the 2/3 chance. To increase the odds of winning from 1/3 to 2/3, the contestant should therefore always switch doors. In a laboratory analog of this problem, Friedman's (1998) participants failed overall to make the correct decision and only exhibited limited learning through repeated trials.

A critical element in this analysis is the assumption that Monty always opened an unchosen door that did not contain the grand prize. Under that assumption, the correct contestant response would be to switch doors. One could make a very different assumption about Monty's behavior, however, if one assumed a "mean Monty"—one who knows where the grand prize is located and who wants to reduce the contestant's chance of winning. Imagine that after the contestant chooses a door, "Mean Monty" could either declare the game over or open one door and suggest a switch. Assuming that Monty wants to reduce the contestant's chance of winning the grand prize, the contestant should never accept Monty's offer to switch. Since Monty wants the contestant to lose, the fact that Monty makes the offer should tell the contestant that she has already picked the winning door.

In summary, a normative analysis suggests that contestants should always switch doors in the "Monty always opens" condition but never in the "Mean Monty" condition. We predict, however, that the rules of the game and Monty's decision rules, even when carefully spelled out, will be out of focus to contestants and will not be normatively evaluated. We also predict that a consideration of these typically out-of-focus pieces of information is necessary to arrive at the correct answers to these problems. (Note: Despite the extensive re-analysis of this game show, no clear data exists on the actual decision rule that was used on the show.)

Acquiring a Company Adapting Akerlof's (1970) "lemons" problem, Samuelson and Bazerman (1985) created a takeover game in which people systematically make offers with negative expected values—in other words, they make mistakes. In this problem, which is provided in Appendix A, one firm (the Acquirer) is considering making an offer to buy out another firm (the Target). Participants, who play the role of the Acquirer, are uncertain about the ultimate value of the Target. They are told that its value under current management falls between \$0 and \$100, with all values equally likely. They also know that the Target is expected to be worth 50% more under the Acquirer's management than under its current ownership. Thus, it appears to make sense for the Acquirer to offer to buy the

Target. The Target knows its exact current worth, but the Acquirer does not. The game begins with the Acquirer making one take-it-or-leave it offer. The Target responds, and the game ends.

How much should the Acquirer offer for the Target? Across a number of studies, the dominant range of responses falls between \$50 and \$75 (Ball et al., 1991; Bereby-Meyer & Grosskopf, 2002; Carroll et al., 1988). Carroll et al. (1988) used protocol analyses to identify cognitive patterns underlying these bids. They argue that the most common explanation for the \$50 to \$75 range is, “on average, the firm will be worth \$50 to the Target and \$75 to the Acquirer; consequently, a transaction in this range will, on average, be profitable to both parties.”

In fact, it turns out that the correct answer to the problem is an offer of \$0—no offer at all. Why? Because all offers have a negative expected value, with twice the chance of losing than of winning, and with the possibility of losing twice as much as the largest possible gain. The following analysis of an offer of \$60 per share explains the negative expected value of any positive number.

If I offer \$60 per share, the offer will be accepted 60% of the time—whenever the firm is worth between \$0 and \$60 to the Target. Since all values between \$0 and \$60 are equally likely, the firm will, on average, be worth \$30 per share to the Acquirer, resulting in a loss of \$15 per share (\$45 to \$60). Consequently, a \$60 per share offer is unwise. (Bazerman, 2005)

This reasoning can be applied to any positive offer. On average, the Target will be worth 25% less than the price the Acquirer pays when its offer is accepted. If the Acquirer offers \$X and the Target accepts, the company is currently valued at anywhere from \$0 to \$X. Because any value in that range is equally likely, the expected value of the offer therefore equals $\$X/2$. Since the company is worth 50% more to the Acquirer, its expected value is $1.5(\$X/2) = 0.75(\$X)$, or 75% of its offer price. Thus, for any value of \$X, the Acquirer’s best option is to not make an offer (\$0 per share).

Clearly, the game is a trap. While in all circumstances the firm is worth more to the Acquirer than to the Target, any offer higher than \$0 generates a negative expected return to the Acquirer. Nonetheless, the vast majority of participants bid positive values that can be explained systematically. Replications with accounting firm partners, CEOs, investment bankers, and many other groups of “experts” have achieved similar results (Bazerman, 2005). In addition, similar patterns were exhibited by participants who were paid on the basis of their performance and given multiple trials to foster learning (Ball et al., 1991; Bereby-Meyer & Grosskopf, 2002).

Multi-Party Ultimatums The ultimatum game is one of the most common games studied by experimental economists (Guth, Schmittberger, & Schwarze, 1982; Roth, 1991). In the ultimatum game, Player 1 divides a known, fixed sum of money any way she chooses by filling out a form that states, “I demand X.” Player 2 either accepts the offer and receives his portion of the money allocated by Player 1 or rejects the offer, leaving both sides with nothing. Models that assume

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that both actors will maximize profit predict that Player 1 will offer Player 2 only slightly more than zero and that Player 2 will accept any offer greater than zero. These models fail to account for the fairness considerations that players incorporate into their offers and choices. Across many studies, Player 1 typically demands less than 70% of the funds, while individuals in the role of Player 2 often reject profitable but unequal offers (Ochs & Roth, 1989).

Inspired by this problem and by a real-world situation in which a buyer made an offer to a selling group that consisted of multiple individuals, Messick et al. (1997) constructed a multiple-party ultimatum game. In this version of the game, six participants were assigned the roles of A, B, C, D, E, and F. Player A was given \$60 dollars and was told to allocate the money to herself and to the other five parties. She was told that her offers to B, C, D, E, and F had to be equal and had to be an integer. B, C, D, E, and F each recorded the minimum amount of money that they would accept from A. The game's decision rule was the key manipulation. In one variation, if the amount that A offered to B–F equaled or exceeded the smallest amount requested by B, C, D, E, or F, then A's allocation of A went into effect, and if it was not, all parties received zero (we will call this condition "dividing the pie—smallest"). In the other condition, if the amount that A offered to B–F equaled or exceeded the largest amount requested by B, C, D, E, or F, then A's allocation went into effect, and if it was not, all parties received zero (we will call this condition "dividing the pie—largest").

Just as in the two-party ultimatum game, a bi-modal response pattern emerges from the demands of players B–F. Many B–F players will accept an offer of \$1 because \$1 is better than turning down the offer and getting nothing. Another large group of players B–F demand \$10—their "fair" share. Kahneman and Tversky (1974) have shown that individuals underestimate disjunctive events and overestimate conjunctive events. This phenomenon leads to the prediction that player A will underestimate how likely it is to get at least 1 out of 5 people to accept \$1 and to overestimate the likelihood of all five individuals accepting anything less than \$10. Messick et al. (1997) found empirically that player A's profit maximizing strategy would be to divide the money 55-1-1-1-1-1 in the dividing the pie—smallest condition and to divide it 10-10-10-10-10-10 in the dividing the pie—largest condition. In fact, in the latter version, any allocation other than 10 always led to player A receiving \$0.

The empirically best strategy for player A diverged dramatically between the two conditions (offers of \$1 vs. \$10), but the actual behavior of player A was much closer across the two conditions. On average, player A allocated \$8.15 to the other players in the dividing the pie—smallest condition and allocated \$8.47 to the other players in the dividing the pie—largest condition. Player A in dividing the pie—largest condition missed an easy opportunity to collect \$10, while player A in dividing the pie—smallest condition passed up a significant opportunity to profit. Part of the failure of player A to maximize his or her expected value can be explained by fairness considerations, and perhaps by a very strong risk aversion in the dividing the pie—smallest condition. We will also test the possibility that much of the failure is due to the insensitivity of player A to the decision rule and to the heterogeneity of players B–F. To rule out fairness and risk aversion as

alternative explanations, the current experiment will adapt the Messick et al. (1997) tasks.

Substantial research on the Acquiring a Company problem suggests that bounded awareness leads decision makers to ignore or simplify the cognitions of opposing parties as well as the rules of the game (Carroll et al., 1988; Messick et al., 1997). The decision makers are faced with several of the conditions likely to lead to such focusing failures: narrow assumptions and information relevant to the self. For example, in the Acquiring a Company problem, the participant is presented with information about his or her role as the Acquirer and with a problem that suggests an offer is expected. The emphasis on self-related (e.g., the Acquirer) information and the narrow assumption that an offer is greater than zero lead to robust errors, which are consistently found in the Acquiring a Company problem (Bazerman, 2005; Samuelson & Bazerman, 1985). When presented with this problem, the overwhelming majority of respondents provided solutions that yield a negative expected return (Carroll et al., 1988).

Across all of the games described above, by focusing on their own thoughts and actions, study participants ignore other key factors that also influence their outcomes and fail to perform optimally in competitive settings (Messick et al., 1997; Tor & Bazerman, 2003). Tor and Bazerman (2003) used protocol analysis to show that people performed suboptimally because they ignored the rules of the game and the decisions of the opposing party. In addition, Tor and Bazerman (2003) found that the same errors existed and predicted failure across three seemingly different tasks—the Acquiring a Company problem, the Monty Hall problem, and the Multi-Party Ultimatum game. These problems are particularly good examples of instances in which the rules of the game and the decisions of others are out of focus, two absolutely central and often accessible pieces of information in a negotiation. In the negotiation domain, the conditions of a challenging task, narrow assumptions, self-relevant information, and affective considerations are to be expected; thus, the rules of the game and the decisions of others are outside of the bounds of awareness.

Idson et al. (2004) use the concept of bounded awareness (referred to as focusing failures in that work) to attack one of the chief limitations of the field of behavioral decision research—its past failure to improve decision making. Building off the analogical reasoning work of Thompson, Gentner, Loewenstein and colleagues (Gentner & Markman, 1997; J. Loewenstein, Thompson, & Gentner, 1999; Thompson, Gentner, & Loewenstein, 2000), Idson et al. (2004) show that that proper training can reduce bias in the Acquiring a Company problem, one of the most robust problems in the decision literature (Bereby-Meyer & Grosskopf, 2002). Idson et al. (2004) find that by allowing study participants to see and understand differences in seemingly unrelated decision problems (the two versions of the Monty Hall game and Multi-Party Ultimatums presented above) study participants can learn to focus more accurately on the decisions of other parties and the rules of the game—the keys to solving the Acquiring a Company problem.

Tor and Bazerman (2003) and Idson et al. (2004) focused on the three simplest decision problems (those described above) that we could identify as potential examples of the predicted focusing failures. But we believe that these documented

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focusing failures have far greater explanatory power. Ho, Camerer, and Weigelt (1998) examine a problem in which each player chooses a number from 0 to 100. The winning number is the one closest to one-half of the mean of all the entries. If the decisions of others and nuances of the rules of the game are entirely out of focus, 50 emerges as a naïve yet common submission. But Ho et al. (1998) note that even the simplest logic should lead people to think that if the average were 50, a better submission would be 25. Of course, this logic requires attention to the rules of the game. Yet when you consider the decisions of other players, it should become clear that others will follow this same logic; therefore, the mean might be 25, which means that you should submit 12.5. However, if others use this logic, you should submit 6.25, and so on, down to 0—the equilibrium solution. The winning answer is typically greater than 0. But simple numbers such as 50 and 25 are prevalent, and they derive from not fully focusing on the rules of the game and the thoughts of other players.

Camerer and Lovallo (1999) found that participants were insensitive to the quality of their competition, a phenomenon they label “reference group neglect.” We would argue that these researchers are identifying a common pattern of the quality of competitors that typically falls outside the awareness of the decision maker. They found that participants largely ignore how the quality of competitors interacts with the rules of the competition to affect the wisdom of entering their experimental market. Their result shows that focusing failures lead to decisions with negative expected values.

Moore (2000) finds bounded awareness in the context of negotiation deadlines. In a very simple negotiation between a buyer and seller, where if no agreement is reached both parties get zero payoff, Moore’s procedure then imposes a publicly known deadline on one of the parties, which intuitively puts that party at a disadvantage. Of course, if one party has a deadline, so does the other. Objectively, the deadline affects the two parties symmetrically, but negotiators falsely believed that a deadline put them at an asymmetric disadvantage.

In another experiment, Moore imposes time-related costs on one of the two parties. This manipulation objectively does give the party without time-related costs an advantage. Moore then offers the party with time-related costs the option to impose a firm deadline on the negotiations, eliminating their own asymmetric time-related costs and creating symmetric costs for the failure to reach agreement. The majority of study participants passed on this option, despite the strategic benefit it would create. These participants failed to think through how the rules of the game would affect the other party, and they suboptimized as a result.

Massy and Wu (2001, unpublished) show that study participants exhibit “system neglect,” undervaluing the importance of the more general context in which they are making their decision. We see one critical example of this type of focusing failure in the lack of concern exhibited by citizens of the United States to consider campaign-finance reform as a means of curbing the political influence of special-interest groups (Bazerman, Baron, & Shonk, 2001). When citizens are asked whether they support and care about this issue, they say “yes.” But when asked to rank campaign-finance reform against other issues, they rank it very low. Bazerman et al. (2001) argue that voters undervalue campaign-finance reform

because of a specific failure to focus on how the system influences important outcomes. Yet, people should care about such reform because it would affect virtually every other issue (and its effects could be enormous). But people do not tend to think through this process; instead, they value issues that are more clearly seen as end states or outcomes, rather than using broader awareness that would direct attention toward a set of important outcomes (Bazerman et al., 2001).

We see this chapter as being broadly compatible with the review of the negotiation literature by Bazerman et al. (2000b) that argues that a critical new research direction concerns how negotiators psychologically define the negotiation game. Bazerman et al. (2000b) build off the game theoretic work of Brandenburger and Nalebuff (1996) who argued that how competitors define the game may be more important than the moves they make within the game. We offer bounded awareness as a more unique construct to explain how people may make systematic errors in how they define the negotiation game.

WHAT ELSE IS OUT OF FOCUS IN NEGOTIATION?

The initial negotiation studies reviewed above are meant to exemplify the potential to study and improve negotiations by considering what is outside of awareness of most negotiators who should be in focus. Other speculative writing has argued that negotiators often err by failing to add issues to the table, failing to look for contingent contracts, and overly defining the structure of the negotiation as fixed, all of which we can conceptualize as products of narrow assumptions. Often, wise agreements occur by changing the negotiators who are at the table, changing the agenda, adding parties to the table, and so forth. We would argue that these nontraditional solutions can be systemized by the development of a literature based on what is commonly outside of awareness in negotiation.

Like any new conceptual ideas, ours are loosely defined and will improve over time. Rather than offering a summary of a specific study or a tightly defined construct, we contribute the argument that the examination of what is and is not in focus in negotiation offers insight into the limitations in negotiation effectiveness and allows us to continue our search for strategies to help negotiators add value.

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