

What Do People Value When They Negotiate? Mapping the Domain of Subjective Value in Negotiation

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Four studies support the development and validation of a framework for understanding the range of social psychological outcomes valued subjectively as consequences of negotiations. Study 1 inductively elicited and coded elements of subjective value among students, community members, and practitioners, revealing 20 categories that theorists in Study 2 sorted into 4 underlying subconstructs: Feelings About the Instrumental Outcome, Feelings About the Self, Feelings About the Negotiation Process, and Feelings About the Relationship. Study 3 proposed a new Subjective Value Inventory (SVI) and confirmed its 4-factor structure. Study 4 presents convergent, discriminant, and predictive validity data for the SVI. Indeed, subjective value was a better predictor than economic outcomes of future negotiation decisions. Results suggest the SVI is a promising tool to systematize and encourage research on subjective outcomes of negotiation.

Keywords: negotiation, social psychological outcomes, satisfaction, trust, self, justice

Negotiation—a decision-making process in which people mutually decide how to allocate scarce resources (Pruitt, 1983)—on its face appears to involve primarily the exchange of tangible goods and services, yet it also leaves an inherently psychological imprint on those involved. Recent research has incorporated subjective, social psychological factors into the study of negotiation, challenging the rationalist assumption that has tended to portray

negotiation as an economically motivated or strategic interaction best practiced by rational, unemotional actors—perhaps as a result of the origins of the field in the study of choice and expected utility within economics (for reviews, see Bazerman, Curhan, & Moore, 2001; Carnevale & Pruitt, 1992; Thompson, 1990). This article presents the results of a large-scale investigation designed to add to this body of research by providing a comprehensive framework of subjective outcomes in negotiation. The goal is both to contribute to the advancement of theory and to provide a tool for researchers to study subjective value in negotiations with a similar level of precision as that with which more tangible objective value has been studied for decades.

Although objective behavioral outcomes clearly represent an important aspect of negotiation performance, researchers have long criticized the relative lack of attention paid to social psychological measures in negotiation. As early as 1975, Ruben and Brown argued that “the time has come to move such measures . . . out of the dark recess known as ‘supplementary analysis’ back into the forefront of researchers’ attention, where they belong” (p. 297). Since the 1960s and 1970s, there has been a gradual increase in the use of perceptual and attitudinal measures as dependent variables within studies of negotiation, but even in the recent 10-year period from 1993 to 2002, such measures were included in only 25% of studies (Mestdagh & Buelens, 2003). Other studies have incorporated social psychological factors as the predictors of economic outcomes rather than as consequential outcomes themselves (Bazerman, Curhan, Moore, & Valley, 2000). The current article attempts to fill this gap with a series of studies mapping the domain of subjective value in negotiation, using a combination of methods to explore and categorize the range of psychological factors that people value as the consequences of their negotiations. We also present the development and initial validation of a survey

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Preparation of this article was supported by the Mitsui Career Development Faculty Chair held by Jared R. Curhan and National Institute of Mental Health Behavioral Science Track Award for Rapid Transition 1R03MH071294-1 held by Hillary Anger Elfenbein.

We are indebted to Corinne Bendersky, Joel Cutcher-Gershenfeld, Gordon Kaufman, Laura Kray, Robert McKersie, Nancy Peace, and Phyllis Segal for collecting data in their classrooms and workshops. For helpful comments, we thank Paul Berger, Joel Brockner, John Carroll, Rachel Croson, Martin Evans, Roberto Fernandez, Adam Galinsky, Richard Gonzalez, James Gross, Sheena Iyengar, Jerome Kagan, David Kenny, Thomas Kochan, Donald Lessard, Bertram Malle, Hazel Markus, Victoria Medvec, Steven Mestdagh, Michael Mitchell, Jennifer Mueller, Drazen Prelec, Michele Williams, and Michael Zyphur. For research assistance, we thank Edward Carstensen, Ken Coelho, Zachary Corker, Kate Dowd, Scott Edinburgh, Ray Faith, Marc Farrell, Pooja Gupta, Adnan Qadir, Shayna Schulz, and Philip Sun. Finally, we thank the members of the Program on Negotiation at Harvard University who generously volunteered their time.

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tool to measure subjective value. The aim is to be as exhaustive as possible, not to supplant related areas of research but rather to organize and pull together topics that often have been studied separately—as diverse, for example, as procedural justice and self-efficacy—and to include them within a broad systematic framework of negotiation outcomes. In doing so, we define the concept of subjective value as the social, perceptual, and emotional consequences of a negotiation.

Social Psychological Outcomes in Negotiation

Previous conceptual frameworks of negotiation form a starting point for the current investigation of subjective value, which in turn empirically tests and validates these frameworks. In her 1990 review of research in negotiation, Thompson proposed that negotiation outcomes fall into two broad classes: economic and social psychological. Economic outcomes refer to explicit terms or products of the negotiation, such as whether an agreement has been reached, how much value or joint benefit has been created, and how resources are divided or claimed by the individual parties (see also Nash, 1953). Social psychological measures in negotiation, Thompson theorized, are grounded in social perception and consist of three important elements: perceptions of the bargaining situation, perceptions of the other party, and perceptions of oneself. Although Thompson's framework includes measures of negotiation process as separate from outcome variables, we argue that a negotiator's feeling about the process—rather than the process itself—is an aspect of subjective value.

Thompson's (1990) first category concerns perceptions of the bargaining situation. This includes judgments and feelings about the negotiation process, for example, the norms, context, structure and scripts, communication and information sharing, and fairness or justice involved (e.g., Brockner & Wiesenfeld, 1996; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Lind & Tyler, 1988; Pinkley, 1990; Thibaut & Walker, 1975).

Perceptions of the other party, Thompson's (1990) second category, involve person perception and impression formation applied to one's negotiation counterpart. Such processes result in feelings that can be classified as either individual or dyadic—that is, what negotiators think of their counterparts and what they think of their own relationships with those counterparts, respectively. However, in practice the two are dynamically linked and can be difficult to separate. At the individual level, this factor includes the attributions that negotiators make about counterparts on the basis of their behavior (e.g., their ethics, tactics, and strategies) and trait inferences such as the expertise, cooperativeness, friendliness, and resulting reputation of the counterpart (e.g., Fortgang, Lax, & Sebenius, 2003; Morris, Larrick, & Su, 1999; Tinsley, O'Connor, & Sullivan, 2002). At the dyadic level, this factor includes the social relationship, trust, respect, liking, and concern for the other party that develops among negotiation counterparts (e.g., Lewicki, McAllister, & Bies, 1998; Naquin & Paulson, 2003; Pruitt & Rubin, 1986).

Thompson's (1990) third category, perceptions of the self, involves turning the person perception process inward. Negotiators judge their own traits, performance, and worth on the basis of their interactions with others (Snyder & Higgins, 1997), using both their internal awareness of motivations and values as well as observations of their own behavior as if from the outside (Ross, 1977).

Unique to perceptions of the self are issues of self-efficacy, self-enhancement and positive illusions, and self-esteem and maintaining face (e.g., Bandura, 1977; Brown, 1968; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004; Taylor & Brown, 1994). What takes place in a negotiation can affect negotiators' attributions about their own skill (Kwon & Weingart, 2004). Self-efficacy, in turn, can influence future negotiation performance (Stevens, Bavetta, & Gist, 1993). White, Tynan, Galinsky, and Thompson (2004) argued that negotiation is an especially sensitive experience for the self because it often involves confrontation and assigning public tangible worth to objects and efforts of personal value.

We expand on Thompson's (1990) framework by highlighting separately an area included within the first category, perceptions of the bargaining situation: a negotiator's feelings about the final terms of the settlement. At the nexus of objective and subjective value is the subjective feeling of satisfaction with one's objective outcome. Oliver, Balakrishnan, and Barry (1994) argued that such outcome satisfaction is an affective comparative evaluation of a settlement, with implications for subsequent behavior such as willingness to continue the relationship with one's counterpart. A negotiator perceives a settlement to be advantageous or disadvantageous via social comparison with respect to prior expectations and the outcomes achieved by other negotiators (e.g., Loewenstein, Thompson, & Bazerman, 1989; Messick & Sentis, 1985; Novemsky & Schweitzer, in press; Straub & Murnighan, 1995). At some level, subjective feelings of success are often the only feedback a negotiator has for his or her performance, given that outside of a classroom exercise one might know the exact dollar value of a deal but rarely the dollar value of the best possible deal that the other side would have accepted or, indeed, the dollar value of deals that would have been achieved by peers in an identical situation.

The Value of Subjective Value

Social psychological outcomes of negotiation are not necessarily the consolation prize of a poor bargaining agreement but rather represent an important area of study for at least three reasons. Subjective value can serve as a good in itself, as a negotiator's intuition about objective outcomes, and as a predictor of future objective value.

A Good in Itself

In O. Henry's classic Christmas story *The Gift of the Magi*, a young husband and wife facing hard times each sell their most prized possession to buy a gift that is rendered useless by the other's parallel sacrifice. Yet the reader is left to believe that the couple gained more than it lost from the exchange, even if a rational analysis would conclude that economic value was left on the table. Likewise, negotiators sometimes forfeit or limit opportunities to extract value, either consciously or unconsciously, in deference to relational goals or norms, and doing so might preserve or even strengthen relationships (Curhan, Neale, Ross, & Rosencranz-Engelmann, 2006). Negotiations often take place in the context of ongoing interpersonal relationships among family members, friends, neighbors, colleagues, and long-time business associates. The quality of the relationship can be important beyond

the particular issues at stake and the resources being divided (Gelfand, Smith, Raver, & Nishii, in press). In the absence of a relationship, or even knowledge of a counterpart's identity, participants in ultimatum bargaining games often make financial trade-offs to preserve their own subjective feelings about fairness to others (see, e.g., Bazerman & Neale, 1992; Camerer & Thaler, 1995; Güth, Schmittberger, & Schwarze, 1982). "Negotiators' interests can go beyond the obvious and tangible," Lax and Sebenius (1986) wrote, "Take for example, the almost universal quest for social approval or the simple pleasure one derives from being treated with respect, even in a one-time encounter" (p. 74). More recently, Tyler and Blader's (2003) group engagement model placed respect in a central role, and indeed, Blount and Larrick (2000) showed that concerns for respect predicted negotiators' preferences over and above instrumental concerns.¹ These findings add to a body of work demonstrating a shared and self-fulfilling myth regarding the value of self-interest as a motivator (Miller, 1999; Miller & Ratner, 1998; Mills, 1940). Although it can be less socially acceptable to discuss motives other than self-interest, they are no less important in driving our behavior.

Negotiator's Intuition About Objective Outcomes

Parties often lack the information and ability to perform a full, accurate, rational analysis of negotiation situations, and consequently they can have perceptions that differ greatly from objective economic analyses (Thompson & Hastie, 1990). How do you ever know if you succeeded in a negotiation? It would be implausible, not to mention uncomfortable, for a real-world negotiation to conclude with a debriefing of parties' aspirations, targets, and breaking points. In many cases, it would be challenging even to quantify one's own outcomes and to aggregate across multiple issues. Thus, negotiators generally rely on subjective intuition to evaluate how well they did. If subjective value mirrors intuitions about performance, then it may be a more proximal predictor of future behavior than objective performance itself. Even if the link is not always direct or transparent, behavior is influenced by a person's perceptions, thoughts, and attitudes rather than the objective reality of a situation (see, e.g., Eagley & Chaiken, 1998). Thus, understanding subjective value could shed light on the motivations and action tendencies of negotiators and the process of learning from experience.

Predictor of Future Objective Value

Finally, the subjective value resulting from a negotiation may feed back, positively or negatively, into future economic outcomes. Individuals who increase the subjective value of their counterparts may be able to develop and reap the benefits of more favorable reputations (Croson & Glick, 2001; Fortgang et al., 2003; Goates, Barry, & Friedman, 2003; Tinsley et al., 2002). Increasing one's own subjective value could increase perseverance and motivation in future negotiations. At the relationship level, the interpersonal rapport developed in Negotiation A might foster concern for the other party, information sharing, and other behaviors critical to the success of Negotiation B (Drolet & Morris, 2000; Mannix, Tinsley, & Bazerman, 1995; O'Connor, Arnold, & Burris, 2005; Pruitt & Rubin, 1986). Indeed, Negotiation B is more likely even to take place if negotiators establish the foundation for

a relationship in Negotiation A (Oliver et al., 1994). Furthermore, negotiators need sufficient good will to implement the objective terms of a contract and the so-called social contract for how they work together, communicate, and resolve disputes in the future (Fortgang et al., 2003; Walton, Cutcher-Gershenfeld, & McKersie, 1994). Thus, maintaining good relationships—which might be hindered by extracting all possible economic rewards—can be an effective strategy in maintaining the cooperation necessary for greater returns in the long run. For example, in the prisoner's dilemma game, the tit-for-tat strategy prevails over other strategies in the long term, even though it does not outperform any given counterpart, because it maintains stable cooperation over longer periods than other strategies (e.g., Axelrod, 1984; Komorita & Parks, 1995).

Although subjective value may be a precursor to future objective value, it is important to emphasize that the two frequently diverge as well. This is particularly, but not exclusively, the case in the short term. The subjective satisfaction that one derives from an objective outcome is not a linear function, nor even in some cases is it monotonically increasing (Conlon, Lind, & Lissak, 1989; Kahneman & Tversky, 1979; Northcraft, Brodt, & Neale, 1995). Indeed, experimental manipulations such as increasing or attending to one's aspirations can drive the two in opposite directions, increasing objective negotiation performance while simultaneously reducing subjective satisfaction (Galinsky, Mussweiler, & Medvec, 2002; Thompson, 1995). Thus, it is worth studying subjective value as a distinct factor in spite of the reciprocal relationship it can have with objective value.

The Value of Measuring Subjective Value

Even if the umbrella term *subjective value* may be new, the concept itself is already woven into the fabric of negotiations research. The current investigation's contribution is to develop a comprehensive framework and to validate a survey measure of subjective value. Negotiation theorists have not yet agreed on the methods and standards for measuring subjective outcomes (Kurtzberg & Medvec, 1999; Valley, Neale, & Mannix, 1995). Thompson (1990) argued that "comparative analyses of behavior are more difficult when investigators use different measures of performance. Apparently inconclusive results and even contradictory findings may often be traced to different measures of performance" (p. 517). Thus, the current research program has the potential to benefit the field by making findings from different lines of research easier and more meaningful to reconcile. Furthermore, creating a comprehensive, inductive framework has the potential to uncover possible blind spots within negotiations research, revealing fertile areas for future work and contributing to the generation of theory about the role of subjective value in negotiation.

This article presents the results of a four-study program of research designed to answer the question "What do people value when they negotiate?" Using a combination of inductive and deductive methods, we engaged participants from conventional student populations as well as community members and negotiation practitioners. We begin by attempting to map the domain of

¹ We thank an anonymous reviewer for pointing us to these articles.

subjective value using an open-ended inductive approach to generate a wide range of elements of value based on participants' past business and personal negotiations. We continue in the second study by asking negotiation experts to delineate connections among these resulting elements of subjective value, revealing an underlying cognitive map of the construct into four broad factors. The third study uses these elements and factors as a starting point to develop a survey instrument to assess subjective value as a multifaceted perception across a range of negotiation contexts. Finally, the fourth study presents initial evidence for the validity of this instrument by showing its strong convergence with related constructs and lesser correlation with unrelated constructs, its divergence from personality traits, and its ability to predict negotiators' actual willingness to engage in future relationships with counterparts. These latter studies provide researchers with a systematic tool to include subjective value alongside objective value as a key consequence of negotiations.

Study 1: What Do People Value?

We begin the program of research with a broad-based empirical exploration of subjective value. Although existing theoretical frameworks and constructs within the umbrella of subjective value guide our understanding, Study 1 aims to provide an answer as exhaustive and inclusive as possible to the question of what people value in negotiation.

Rather than limiting participants to preconceived categories, this study provided an open-ended opportunity for a wide range of participants to generate examples of their own valued outcomes in recent business and personal negotiation contexts. The retrospective self-report of values can leave open whether participants may have additional values they are unable to access through introspection (e.g., Robinson & Clore, 2002; Silvia & Gendolla, 2001) or unwilling to report given social desirability and self-presentation concerns (e.g., DeMaio, 1984; Jones & Pittman, 1982; Schwarz & Strack, 1999). However, the values that negotiators report for their interactions are worthwhile in themselves, as the lay theories of goals (Miller, 1999) that form "vocabularies of motive" (Mills, 1940, p. 904). Even so, we used self-administered confidential questionnaires, for which social desirability concerns are the least pronounced (DeMaio, 1984), rather than face-to-face or telephone interviews. Furthermore, we considered a separate category for any concept mentioned by even 1 participant. In the absence of research that can effectively sample a variety of disputes in real time, the self-report questionnaire technique used in the current study remains a worthwhile tool for accessing the lay theories negotiators hold regarding their valued negotiation outcomes.

Method

Participants

To sample participants likely to represent a diversity of backgrounds, approaches, and experiences, we recruited a total of 103 students, community members, and negotiation practitioners. Undergraduate students at the Massachusetts Institute of Technology responded to campus flyers ($n = 43$ [18 women, 25 men], mean age = 19.23 years, $SD = 0.77$). Community members responded to posted advertisements in major transportation stations, squares, supermarkets, and stores in the Boston area ($n = 32$ [12 women, 20 men], mean age = 33.45 years, $SD = 3.26$). Union and

management negotiation practitioners participated while attending a negotiation workshop ($n = 28$ [6 women, 22 men], mean age = 49.96 years, $SD = 7.97$). Students and community members were paid \$10.

Procedure

Questionnaire. The survey was designed to generate specific examples of the criteria participants used to evaluate their subjective value from negotiations. To evoke a wide range of possible contexts, the survey began with a definition of *negotiation* as "any situation in which people are trying to accomplish a goal and have to communicate with at least one other person in order to achieve that goal." Participants were instructed to recall two such incidences in which they had taken part during the past year, one in a personal setting and one in a business setting, counterbalanced in order. For each incident, the survey instructed participants to describe the situation briefly in writing and to generate subjective value factors: "Please list below what was important to you in the negotiation you just described. In other words, what are all the factors that mattered to you in this negotiation." To encourage a thorough listing of possible factors, these instructions appeared alongside 16 blank spaces and invited participants to continue on the back side of the page if desired. Participants completed an average of 4.43 ($SD = 2.00$) subjective value factors for personal and 4.42 ($SD = 2.16$) subjective value factors for business negotiations. Finally, participants were instructed to rate the importance to them personally of each factor they had just listed, using a scale ranging from 1 (*not very important*) to 7 (*extremely important*). Typical business examples included negotiations with supervisors over salary and work schedules and experiences as consumers, whereas typical personal examples included splitting household chores, caring for relatives, and coordinating social plans.

Coding. Sixteen pilot surveys completed by students, professionals, and community members, not included in analyses below, provided sample subjective value factors used to create a coding system. The goal was to provide a list of comprehensive categories that accurately described the breadth of goals listed by participants. Four independent coders further refined this initial coding system by categorizing each subjective value factor from a random sample of 22 of the 103 questionnaires, which were also included in analyses.

Results

Table 1 lists the 20 varied coding categories that emerged, along with their frequency, average rated importance, and the coding reliability. Interestingly, although participants more frequently mentioned factors associated with their objective negotiation outcomes—that is, terms of the agreement that were either quantifiable (e.g., money or delivery time) or not readily quantifiable (e.g., high quality)—than any of the other factors, their importance ratings were in fact no higher than a range of subjective factors such as relationship quality, fairness, listening, remedy for wrongdoing, morality, and positive emotion. This was the case both for business negotiations (objective outcomes, $M = 5.38$, $SD = 1.32$; subjective outcomes, $M = 5.31$, $SD = 1.59$), $t(47) = 0.91$, *ns*, for the 48 participants reporting both types of outcomes, and for personal negotiations (objective outcomes, $M = 5.37$, $SD = 1.60$; subjective outcomes, $M = 5.38$, $SD = 1.32$), $t(45) = 0.12$, *ns*, for the 46 participants reporting both types of outcomes.

Discussion

Study 1 was an inductive examination of the components of subjective value. Participants provided an unconstrained reporting of the factors important to them in previous business and personal

Table 1
Frequencies, Ratings, and Coding Reliability of Subjective Value Factors Reported in Business and Personal Negotiations

Coding category	Business			Personal			Coding reliability
	Frequency	Importance		Frequency	Importance		
	%	<i>M</i>	<i>SD</i>	%	<i>M</i>	<i>SD</i>	
Nonquantifiable terms of the agreement	31.1	5.4	1.4	27.1	5.3	1.6	0.94
Quantifiable terms of the agreement	18.1	5.4	1.3	16.9	5.4	1.6	0.89
Legitimacy	8.2	5.5	1.7	10.2	4.5	1.7	0.94
Impact on an outside party	7.6	5.3	1.4	3.9	6.1	1.2	0.80
Respect	6.1	5.2	2.0	6.7	5.6	1.4	0.83
Fairness/equity	3.6	5.9	1.6	1.5	6.1	1.2	0.98
Good attitude	2.9	5.2	1.5	1.5	5.0	1.8	0.92
Positive emotion	2.5	6.2	1.2	5.0	5.6	1.4	0.94
Effective process	2.3	4.8	1.4	3.0	5.2	1.9	0.85
Morality/ethics/religious	2.1	6.7	0.7	0.7	5.7	2.4	0.98
Resolution	1.9	6.2	0.8	1.5	3.6	1.6	0.95
Relationship quality	1.8	5.8	1.7	2.8	5.3	1.7	0.91
Trust	1.7	6.3	0.4	2.0	5.3	1.2	0.94
Listening	1.3	5.7	1.6	1.7	6.0	1.0	0.96
Satisfaction	1.1	5.4	1.1	4.1	5.8	1.3	0.84
Acknowledgement of wrongdoing/remedy	1.1	6.6	0.5	0.2	7.0		0.98
Saving face	0.8	3.3	2.2	0.4	3.5	3.5	1.00
Compromise/mutual agreement	0.6	5.3	1.5	3.9	6.1	0.9	0.82
Winning	0.6	5.5	2.1	0.7	4.7	1.5	0.88
Peaceful/nonconfrontational	N/L			0.8	2.0	7.4	0.67
Unclear or other	4.8	0.5	2.0	5.2	0.8	2.1	0.89
Overall	100.0			100.0			0.87

Note. N/L indicates that no participant in that condition listed a subjective value factor falling under the particular coding category. Listed values may not add to 100% due to rounding.

negotiations and then reported the level of importance of each factor. We attempted to capture a wide range of approaches and experiences with various negotiation contexts by sampling participants widely and providing them with a broad definition of negotiation. Accordingly, the 20 categories resulting from their concerns spanned from ethics to saving face to making more money. Metrics of objective performance, the typical focus of much negotiations research, were the most salient to participants in terms of frequency of reporting. Even so, 20% of the participants did not list any factors describing the objective terms of the agreement. And, surprisingly, for participants reporting such objective metrics, they generally rated them as no more important than many other factors highly personal and subjective. These findings suggest that subjective outcomes in negotiation may be dramatically underrated in their real-world importance.

Study 2: Mapping the Domain

Study 1 generated 20 different categories of subjective value but left open the question of how these various categories relate to each other. Thus, the goal of Study 2 was to examine the higher order groupings and constructs that emerge when mapping the domain of subjective value. To provide such a mapping, negotiation theorists took part in a sorting task designed to illustrate the emergent conceptual groupings among the factors. Such sorting techniques are well established for studying a variety of cognitive and perceptual phenomena where the purpose is to provide measures of similarity versus distance between concepts or ideas (Rosenberg, 1982).

Whereas Study 1 explored the negotiation outcomes valued by a wide range of participants, Study 2 relied on the expertise of negotiation theoreticians, members of a distinguished research center. Negotiating frequently or assisting others with their negotiations may lead to a more clearly articulated and nuanced conception of negotiation outcomes. Indeed, Neale and Northcraft (1986) reported that practitioners generally held a more integrative and collaborative view of the process of negotiation, which suggests that they would likely hold a deep and comprehensive perspective on the topic of subjective value. Our aim in Study 2 was to tap into the wisdom of experts—"the embodiment of the best subjective beliefs and laws of life that have been sifted and selected through the experience of succeeding generations" (Seligman & Csikszentmihalyi, 2000, p. 11)—to examine the constructs and cognitive mapping that may emerge within the larger umbrella of subjective value.

Method

Participants

Participants were professional members of the Program on Negotiation at Harvard University, an "inter-university consortium committed to improving the theory and practice of negotiation and dispute resolution" (see <http://www.pon.harvard.edu/>). Jared R. Curhan sent a letter of invitation for a 1-hr interview to 116 Program on Negotiation members who had addresses on the mailing list. Of these, 24 (21%) agreed to participate, and the first 15 were included in the study. Their professions included university professors, ombudspersons, mediation trainers, negotiation consultants, and other negotiation-related professional roles.

Stimuli

A series of forty 4-in. \times 6-in. index cards were prepared, with two exemplars for each of the 20 coding categories of subjective value that emerged in Study 1. The exemplars were first selected as archetypes among the samples of the coded items, in that the items represented frequent examples of the types of statements coded into that category. The examples were rephrased in order to apply to the widest range of negotiation settings, preserving participants' own words where possible but eliminating context-specific details. For example, in the listening category, "that my dad was listening to what I had to say" was rephrased as "party feels counterpart is listening." Figure 1 lists all 40 exemplars.

Procedure

Participants were told that the set of 40 index cards, appearing in a random order differing for each participant, listed factors mentioned by participants in an earlier study as important negotiation outcomes. Instructions requested participants to "sort the cards into conceptual categories that make sense to you, based on the similarity or dissimilarity of the items, making as many or as few piles as you wish." Participants created an average of 7.13 categories ($SD = 2.20$).

Results

Analyses used the results of the sorting procedure to assess the conceptual distance between each pair of items among the 40 (Rosenberg, 1982) and subsequently the number of subconstructs necessary and sufficient to describe the various subjective outcomes generated in Study 1. A 40 \times 40 dissimilarity matrix generated for each participant contained a 0 for pairs of cards that were sorted into the same pile and a 1 for pairs sorted into different piles. The 15 participants' distance matrices were summed so that each cell in the matrix contained a number between 0 and 15, representing the count of participants for whom the pair of cards appeared in different piles. Such distance measures are the basis of input for the multivariate techniques of clustering and multidimensional scaling (Rosenberg, 1982).

Cluster analysis. Cluster analysis is a classification technique for forming homogeneous groups using variance minimization techniques to provide the greatest coherence within groups and the greatest distance between groups (Borgen & Barnett, 1987; Kuiper & Fisher, 1975). Using the CLUSTER procedure (with Ward's minimum-variance method) in the SPSS statistical software package, a four-cluster solution emerged as the optimal grouping on the basis of the criteria outlined in Tunis, Fridhandler, and Horowitz (1990) of (a) providing clusters that were conceptually meaningful and interpretable and (b) stability, in that the clusters changed only minimally when the four-cluster solution was compared with the other possible solutions. Figure 1 presents the tree diagram, or dendrogram, that illustrates the extent to which items clustered together into categories. On the basis of the items falling into each category, we named them *Feelings About the Instrumental Outcome* (Instrumental), *Feelings About the Self* (Self), *Feelings About the Relationship* (Relationship), and *Feelings About the Negotiation Process* (Process). The Relationship and Process clusters also appeared to be subclusters of a larger factor that we named *Rapport*.

Multidimensional scaling. Multidimensional scaling provided a converging technique to examine the robustness of the underlying categorical factor structure. Multidimensional scaling uses the

proximity among objects to generate a graphical representation of the configuration of points to reflect the "hidden structure" in the data (Kruskal & Wish, 1978). Such a technique allows researchers to derive a representation of a cognitive structure without the participant necessarily being aware of or able to report the implicit dimensionality and without prompting by preconceived experimenter notions, thus making it particularly suitable for exploratory research and theory development (Pinkley, 1990; Rusbult & Zembrodt, 1982).

To determine the appropriate number of dimensions in which to represent the data, we used the recommended criteria of (a) no significant increase in variance explained (R^2) on addition of further dimensions, (b) an "elbow" or bend in the plot of stress values where lower numbers indicate goodness of fit (values = .404, .234, .151, .124, .103, and .083 for Dimensions 1 through 6, respectively), suggesting that the four-dimension solution did not appear to substantially reduce the stress beyond that of the three-dimension solution, and (c) yielding a parsimonious and conceptually interpretable solution (Kruskal & Wish, 1978). Balancing these three criteria provided the three-dimensional solution illustrated in Figure 2, with $R^2 = .74$. Conceptually, the multidimensional scaling solution also revealed the same four groupings that were identified in the cluster analysis, of which process and relationship also appeared to be subfactors of a larger rapport construct. These results provided converging evidence for the domains of subjective value identified by the sorting task.

Discussion

The current study examined the conceptual groupings that emerged among the wide range of factors reported by earlier participants as important to them in their negotiations. The goal was to develop a comprehensive and inductively derived typology of subjective value.

On the basis of the empirical results, negotiation theorists appear to group these outcomes into four broad factors representing a comprehensive yet parsimonious description of subjective value. One resulting factor was *Feelings About the Instrumental Outcome*, or the belief by a negotiator of having had a strong objective settlement, represented by elements such as "winning" a negotiation, receiving a significant amount of money, or obtaining a product of high quality. A second factor was positive *Feelings About the Self*, represented by elements such as saving face or doing the "right thing." The third and fourth factors addressed issues with *Feelings About the Negotiation Process* and *Feelings About the Relationship*, respectively, under a larger concept of *Rapport*. Process issues included elements such as being listened to by the other party. Relationship issues included elements such as trust and not damaging parties' relationship.

Although these categories emerged inductively from the data generated by participants in Studies 1 and 2, deductively they bear strong resemblance to previous conceptual frameworks for classifying subjective outcomes in negotiation. Thompson's (1990) outline of psychological measures of negotiation performance focused on perceptions of the negotiation situation (similar to our Process factor), perceptions of the other party (similar to our Relationship factor), and perceptions of the self (similar to our Self factor). Following Oliver et al. (1994), we further expand Thompson's framework to emphasize the nexus of economic and perceptual

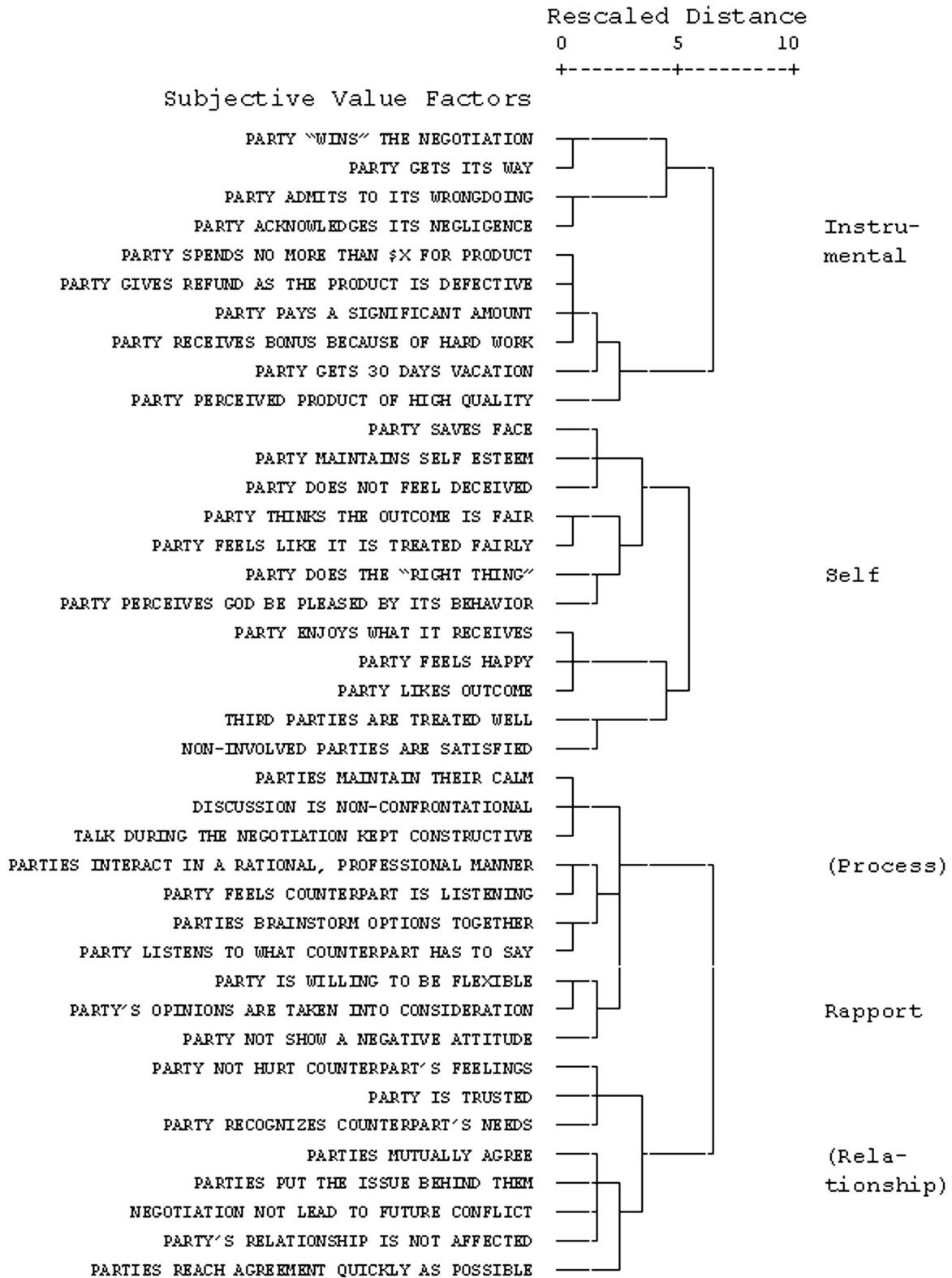


Figure 1. Cluster analysis tree diagram (dendrogram) illustrating the conceptual distance among subjective value factors (Study 2).

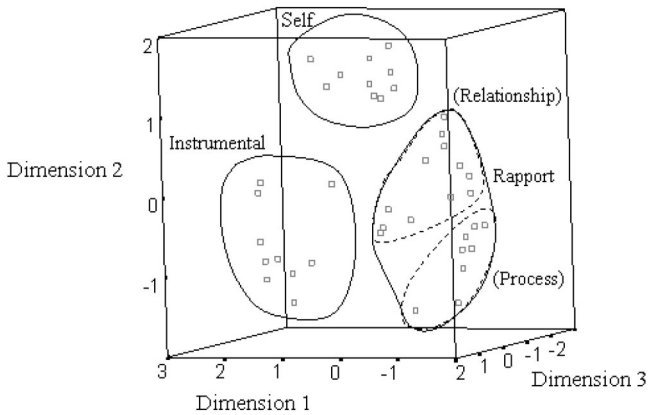


Figure 2. Multidimensional scaling analysis illustrating the conceptual distances among subjective value factors (Study 2).

outcomes, in the form of subjective beliefs and feelings about the tangible outcome of a bargaining encounter (similar to our Instrumental factor). Thus, our current empirical results support these models, using a data-driven approach that converged with results of theory-driven views.

Study 3: The Subjective Value Inventory

Studies 1 and 2 identified and classified areas of subjective value that are relevant and important to negotiators but did not provide a means to incorporate these areas into further research. Study 3 takes the results of the first two studies as a starting point to develop a questionnaire, the Subjective Value Inventory (SVI). By generating a relatively large initial pool of questions representing the four factors of subjective value identified in Study 2, selecting items for inclusion on the basis of their psychometric properties, and confirming that the resulting questionnaire accurately portrays the four-factor model, our intention is to provide a relatively efficient yet broad tool for the inclusion of subjective value as a key outcome in future negotiations research.

Method

Questionnaire

The results of Studies 1 and 2 were used to generate a questionnaire intended to measure the degree of subjective value experienced in a negotiation. Inductively, the subjective value factors that were generated in Study 1 and subsequently examined in Study 2 formed the core basis for generating survey items. Study 1 generated 20 different coded categories of subjective value that Study 2 distilled into four factors. We drafted an initial pool of 14, 8, 20, and 20 survey items, respectively, for the categories Feelings About the Instrumental Outcome, Feelings About the Self, Feelings About the Negotiation Process, and Feelings About the Relationship, respectively. These inductively used the subjective value factors and coding derived from Study 1 and deductively made use of the research literature on subjective outcomes in negotiation to guide the amount of coverage for each of the four factors. Wording attempted to make each item clear, vivid, and applicable to the widest range of possible negotiation contexts. To reduce the effects of fatigue and response sets, the 62 total questions appeared in one of six different random orders, counterbalanced across participants.

Questionnaire instructions requested participants to consider a recently experienced negotiation and to describe it briefly before responding to the 62 questions with respect to that negotiation. As in Study 1, to evoke a wide range of possible contexts, the survey began with the same broad definition of negotiation.

Participants

Given the volume of research on negotiations taking place with student samples, for consistency in creating and testing the properties of a survey instrument we elected to work with student samples for this phase of the research program. Two distinct samples were recruited in order to conduct exploratory and confirmatory analyses on separate data sets. The exploratory sample consisted of 141 undergraduate and master's-level business students at the University of California, Berkeley, who participated for course credit. The confirmatory sample consisted of 272 master's-level business students at the University of California, Los Angeles, who completed the survey as part of a course on negotiations and conflict management. To sample participants drawing on real-life experiences as well as those responding in real time without the need to recall events from past memory, of these 272 participants, half were assigned at random to complete the survey on the basis of an in-class exercise just completed, simulating a salary negotiation (Schroth, Ney, Roedter, Rosin, & Tiedmann, 1997), and the other half on the basis of a real-life negotiation in which they had taken part outside of the class.

Results

An exploratory factor analysis was conducted to identify the four best items for each subfactor of subjective value, resulting in a more manageably sized 16-item SVI that could be used in subsequent confirmatory analyses. Because the goal was to examine item loadings as one heuristic for selecting survey items rather than for the purpose of exploring the factor structure of the SVI itself, our analytic strategy was to examine each factor of subjective value separately in a principal components analysis with varimax rotation containing only the items intended for that factor. The heuristic for item selection was to balance three criteria: (a) high loading on its intended factor, (b) content assessing unique aspects of the category (McCullough, Emmons, & Tsang, 2002), and (c) maximum interitem correlations. Table 2 contains the resulting items selected for each factor.

Structural equation modeling examined the structure and coherence of the resulting 16 items, using Analysis of Moment Structure software (Byrne, 2001), substituting the sample's mean value in the few cases where participants did not complete all 16 items ($M_s = 3.0\%$ and 0.9% , $SD_s = 2.8\%$ and 1.1% , respectively, across items for the exploratory and confirmatory samples). We compared the fit of three models: (a) a one-factor model containing all 16 items, (b) a three-factor model (Instrumental, Self, and Rapport), and (c) the "three-two" model predicted on the basis of the results of Study 2, with three factors (Instrumental, Self, and Rapport) and two subfactors (Relationship and Process) within the larger factor of Rapport. Given the variation among researchers in norms regarding the optimal fit statistics to evaluate structural equation models—and the differing strengths and weaknesses of each individual index—we tested and present a wide range of absolute and relative fit indices (Browne & Cudeck, 1993; Diamantopoulos & Siguaw, 2000; Kelloway, 1998; Kenny, 2005; Kline, 2005; Mulaik et al., 1989).

Table 2
Sixteen-Item Subjective Value Inventory (SVI)

Question	Response options	Factor
A. Feelings About the Instrumental Outcome		
1. How satisfied are you with your own outcome—i.e., the extent to which the terms of your agreement (or lack of agreement) benefit you?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.88
2. How satisfied are you with the balance between your own outcome and your counterpart(s)'s outcome(s)?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.88
3. Did you feel like you forfeited or "lost" in this negotiation?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>A great deal</i> ; includes an option NA (reverse scored)	.78
4. Do you think the terms of your agreement are consistent with principles of legitimacy or objective criteria (e.g., common standards of fairness, precedent, industry practice, legality, etc.)?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.67
B. Feelings About the Self		
5. Did you "lose face" (i.e., damage your sense of pride) in the negotiation?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>A great deal</i> ; includes an option NA (reverse scored)	.66
6. Did this negotiation make you feel more or less competent as a negotiator?	1 = <i>It made me feel less competent</i> , 4 = <i>It did not make me feel more or less competent</i> , and 7 = <i>It made me feel more competent</i> ; includes an option NA	.63
7. Did you behave according to your own principles and values?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.61
8. Did this negotiation positively or negatively impact your self-image or your impression of yourself?	1 = <i>It negatively impacted my self-image</i> , 4 = <i>It did not positively or negatively impact my self-image</i> , and 7 = <i>It positively impacted my self-image</i> ; includes an option NA	.73
C. Feelings About the Process		
9. Do you feel your counterpart(s) listened to your concerns?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.83
10. Would you characterize the negotiation process as fair?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.74
11. How satisfied are you with the ease (or difficulty) of reaching an agreement?	1 = <i>Not at all satisfied</i> , 4 = <i>Moderately satisfied</i> , and 7 = <i>Perfectly satisfied</i> ; includes an option NA	.71
12. Did your counterpart(s) consider your wishes, opinions, or needs?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.84
D. Feelings About the Relationship		
13. What kind of "overall" impression did your counterpart(s) make on you?	1 = <i>Extremely negative</i> , 4 = <i>Neither negative nor positive</i> , and 7 = <i>Extremely positive</i> ; includes an option NA	.85
14. How satisfied are you with your relationship with your counterpart(s) as a result of this negotiation?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.79
15. Did the negotiation make you trust your counterpart(s)?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.79
16. Did the negotiation build a good foundation for a future relationship with your counterpart(s)?	1 = <i>Not at all</i> , 4 = <i>Moderately</i> , and 7 = <i>Perfectly</i> ; includes an option NA	.79

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Absolute indices include chi-square and chi-square/degrees of freedom, root-mean square error of approximation, and the standardized root-mean square residual. Chi-square indicates the extent to which the proposed model differs from the fit for the actual data, with a ratio of chi-square/degrees of freedom of 1 indicating perfect fit and of below 3 indicating reasonable fit (Kline, 2005). Root-mean square error of approximation is a parsimony-adjusted index that includes a correction for model complexity, which is more favorable for models with large numbers of variables but few coefficients to estimate. Values of .06 and lower represent close model fit, and a value of .08 suggests reasonable approximation

(Browne & Cudeck, 1993; Kline, 2005). Standardized root-mean square residual measures the overall discrepancy between the observed and predicted correlations, with values less than .08–.10 generally considered favorable (Kline, 2005). Relative fit indices include the incremental fit index and comparative fit index. For the incremental fit index, values of .90 and higher are considered good, although lower values are expected for models with fewer parameters (Kenny, 2005). By contrast, the comparative fit index generally shows better fit for models with fewer variables (Kenny & McCoach, 2003). Finally, we present model comparison indices: the Akaike information criterion and the test for the difference in

chi-square. The Akaike information criterion indicates the degree of parsimony when comparing models using the same data set, with smaller numbers indicating a better model (Kenny, 2005). The test for the difference in chi-square indicates whether a nested model is a significantly better fit to the data.

Table 3 lists each of these indices for each model for both samples. The single-factor model is a relatively poor fit compared with the three-factor model. The three–two factor model is a significantly better fit than the three-factor model in the exploratory sample and a marginally better fit in the confirmatory sample. Figure 3 illustrates this factor structure for the SVI. Table 4 lists the resulting reliability and correlations among the four factors. The Self factor appears to have the least internal cohesion among items—suggesting, perhaps, a more multifaceted nature—and the lowest level of association with other scale factors.

Discussion

The goal of the current study was to create a general-use questionnaire instrument to measure subjective value in negotiations. We used the psychometric properties of individual questions to select test items and found general support that the resulting survey follows the four-factor structure for subjective value that was derived in Study 2.

The 16-item SVI appears to meet this goal. There are two clearly separate factors of Feelings About the Instrumental Outcome and Feelings About the Self. In addition, as in the second study, the two factors Feelings About the Negotiation Process and Feelings About the Relationship appear to be subfactors of a larger construct of Rapport. However, it is worth noting that in one of the two samples the distinction between these two subfactors reached only marginal significance. Nevertheless, the general convergence between these results with students and those with negotiation theorists in Study 2 suggests that both populations appear to use similar implicit categorizations of subjective value. This provides greater confidence in the generalizability of classifications within the SVI instrument. For theoretical reasons, we elect to retain the

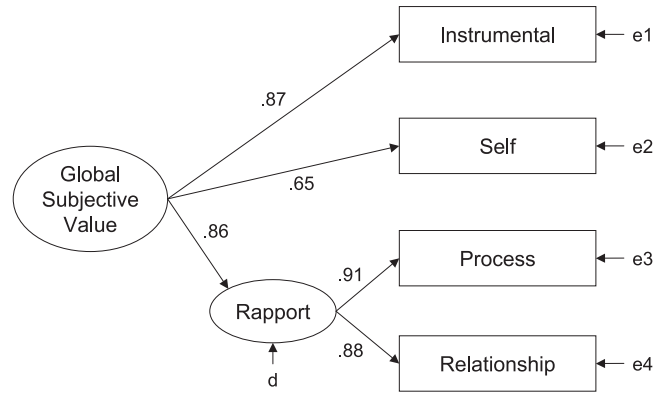


Figure 3. Factor structure of the Subjective Value Inventory (Study 3).

two Rapport subfactors as separate constructs rather than to combine them together into a single survey factor. Although the present research derived these subfactors from the bottom up, we note—iterating from the top down—that each corresponds closely to an existing concept in the research literature. Whereas negotiation process is concerned largely with “cold cognition” issues such as productive discourse, techniques for reaching appropriate settlements, and other related areas, relational concerns draw more emphasis on “hot” interpersonal and affective processes (Thompson, Medvec, Seiden, & Kopelman, 2001; Thompson, Nadler, & Kim, 1999).

Study 4: Initial Validation of the SVI

The fourth study aims to validate the new SVI as a tool for researchers interested in measuring the outcomes of negotiations, with acceptable psychometric properties and convergent, divergent, and predictive validity.

Table 3
Structural Equation Models of the Subjective Value Inventory

Model	Absolute fit					Comparative fit		Model comparison	
	χ^2	df	χ^2/df	RMSEA	SRMR	CFI	IFI	$\Delta\chi^2$	AIC
Exploratory sample (n = 141)									
One-factor	379.927	104	3.653	.138	.983	.772	.775	—	443.93
Three-factor	196.479	101	1.945	.082	.071	.921	.922	183.45**	266.48
Three-two factor	181.312	99	1.831	.077	.070	.932	.933	15.17**	255.31
Confirmatory sample (n = 272)									
One-factor	395.562	104	3.903	.102	.067	.864	.865	—	495.56
Three-factor	287.613	101	2.848	.083	.057	.913	.914	107.95**	357.61
Three-two factor	283.046	99	2.859	.083	.057	.914	.915	4.57†	357.05

Note. The one-factor model contains all 16 items; the three-factor model contains items grouped into the factors Perceived Instrumental Outcome, Self, and Rapport; and the three-two factor model groups items into three factors (Perceived Instrumental Outcome, Self, and Rapport) with two subfactors (Relationship and Process) contained within larger factor of Rapport. RMSEA = root-mean-square error of approximation; SRMR = standardized root-mean-square residual; CFI = comparative fit index; IFI = incremental fit index; AIC = Akaike information criterion.
 † $p \leq .10$. ** $p \leq .01$. (All values two-tailed)

Table 4
Reliability and Correlations Among the Four Factors of the Subjective Value Inventory

Factor	1	2	3	4	5
1. Global	(.91)				
2. Instrumental	.88**	(.86)			
3. Self	.73**	.59**	(.70)		
4. Process	.90**	.71**	.52**	(.85)	
5. Relationship	.90**	.71**	.50**	.83**	(.88)

Note. Reliabilities appear in parentheses on the diagonal.

** $p \leq .01$ (two-tailed).

Convergent Validity

Relevant factors within the SVI should correlate positively with the tools researchers have previously used to examine related areas under the umbrella of subjective value. We assessed the specific constructs of trust, satisfaction, and justice in a mixed-motive negotiation with multiple issues and integrative potential, in which negotiators could vary meaningfully in performance as well as issues of justice, relationship building, and satisfaction.

Trust has been defined as “an individual’s belief and willingness to act on the basis of the words, actions, and decisions of another” (McAllister, 1995, p. 25). Trust is a critical element of negotiators’ development of an effective working relationship (e.g., Lewicki & Stevenson, 1997). Thus, Hypothesis 1 is that trust in a negotiation counterpart converges with the Relationship subscale of the SVI. Likewise, developing an effective working relationship implies greater desire to work again together in the future, which is Hypothesis 2.

Satisfaction with a negotiation is a critical element of subjective value. Oliver et al.’s (1994) subjective disconfirmation framework argues for a “‘better-than/worse-than’ heuristic” (p. 256) in which the match of settlements with negotiators’ prior expectations—known as subjective disconfirmation—drives satisfaction with an outcome. Hypothesis 3 is that outcome satisfaction and subjective disconfirmation converge with the SVI’s Instrumental factor.

Justice has been the focus of an extensive research literature within negotiations and organizational behavior more widely. Colquitt (2001) found evidence for four distinct dimensions of organizational justice. *Procedural justice* refers to fairness in the decision-making processes that lead to decision outcomes, and thus Hypothesis 4 is that procedural justice converges with the Process factor of the SVI. *Distributive justice* refers to fairness in the allocation of outcomes or resources, and thus Hypothesis 5 is that distributive justice converges with the Instrumental factor of the SVI. *Interpersonal justice* refers to fairness in people being treated with respect and sensitivity, and thus Hypothesis 6 is that interpersonal justice converges with the Relationship factor of the SVI. The final factor of justice, *informational justice*, refers to justice in being provided with appropriate communication about the procedures of decision making, and thus Hypothesis 7 is that informational justice converges with the Process factor of the SVI.

Finally, given that negotiators should have at least some intuition about their performance, we predict that the actual objective outcome of a negotiation will correlate with negotiators’ feelings about the objective outcome, which is Hypothesis 8.

Divergent Validity

The tools that researchers have previously used to capture specific constructs within subjective value should have lesser correlations with those factors of subjective value that are less directly relevant on the basis of theory. Thus, Hypothesis 9 is that the magnitude of correlations among the four factor scores on the SVI and the measures of trust, satisfaction, justice, and objective outcome should be largest for the specific predictions of Hypotheses 1–8 and that the other correlations, not specified in advance by theory, should be of lesser magnitude.

Furthermore, divergent validity of the SVI would suggest that the instrument should be largely uncorrelated with personality traits, which is Hypothesis 10. Traits are conceptualized as stable differences at the individual level (John, Donahue, & Kentle, 1991; McCrae & John, 1992). By contrast, the SVI addresses a relational construct regarding the outcomes of an interpersonal interaction. It seems plausible that, over time and in dynamic, reciprocal, and self-selected situations, an association could develop in which personality traits could guide the types of situations and quality of interpersonal interactions that one chronically experiences in negotiations (Magnus, Diener, Fujita, & Payot, 1993). However, the current research setting is a one-time negotiation with a randomly assigned partner, in which the setting is explicitly delineated and fixed across participants. Thus, in this study, in the absence of supportive theory, strong relationships between personality traits and the SVI would be vulnerable to critique regarding common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), in which individuals may perhaps report subjective value differently based on stable temperamental traits. To sample a range of traits, we test the Big Five personality factors (McCrae & John, 1992) as well as a trait often linked with research on personality in negotiation, Machiavellianism (Christie & Geis, 1970).

Predictive Validity

Responses to the SVI at the time of a negotiation should predict important, face-valid criteria at a later point in time. Drawing on Thompson’s (1990) argument that social psychological measures of negotiation are grounded in social perception (Allport, 1955), we examine future perceptions of negotiation counterparts in a context where those perceptions have real consequences. Oliver et al. (1994) argued that the willingness to negotiate again with one’s counterpart is a key consequence of subjective outcomes. Drawing from the research literature on job satisfaction (e.g., Schneider,

1985), Oliver et al. noted that such satisfaction predicts greater retention and stated intention to retain current working relationships. Thus, Hypothesis 11 is that greater subjective value following a negotiation predicts greater subsequent willingness to engage in cooperative interactions with the same counterpart. For a first test, we used a real behavioral measure. As part of participants' introductory course on negotiations, in which bargaining outcomes were the sole determinant of students' grades, we specified to participants that there would be a final exercise for which their recorded preferences indeed determined the assignment of a future teammate in a team-against-team negotiation. Our second test used semibehavioral intentions in the form of participants' opinions of their counterpart's worthiness for future professional contact. To enhance realism, we used questions designed to sample from the type of networking activities common to the alumni of highly rated MBA programs. Thus, the current study aimed to document the potential value of subjective value.

Method

Participants

As part of a half-semester intensive course on negotiations and conflict management at Massachusetts Institute of Technology, 104 master's-level business students participated in this study (77 men, 27 women).

Procedure

Personality instruments. At the beginning of the semester, the students completed self-report personality questionnaires. The Big Five Personality Inventory (15-item measure; Langford, 2003) assessed Conscientiousness, Extraversion, Neuroticism, Agreeableness, and Openness with three questions per factor (reliabilities = .69, .88, .84, .51, and .64, respectively). Christie and Geis's (1970) scale assessed Machiavellianism (reliability = .76).

Mixed-motive negotiation exercise. Students negotiated with a randomly paired partner in a scored mixed-motive negotiation simulation called Riggs-Vericomp, in which they attempted to reach a deal for the transfer of recycling equipment (Wheeler, 2000). The exercise included distributive issues, in which gain to one partner was at the other's equal expense; compatible issues, in which both parties received the same number of points for a given option and thus were best served by the same option (Thompson & Hrebec, 1996); and integrative issues, for which participants could logroll in order to increase the total points score available to both parties (Froman & Cohen, 1970; Pruitt, 1983).

Following the exercise, participants recorded the details of their agreement to provide information from which to compute the number of points earned by each party. To make values comparable across the two different roles, points were converted to standardized *Z* scores using a comparison group of the other participants sharing the same role. These *Z* scores served as the instrumental outcome, referred to as *objective value* in the analyses below.

Postnegotiation questionnaires. Participants completed a series of postnegotiation questionnaires. The 16-item SVI was developed in Study 3. Instructions for the SVI appear in the Appendix. Colquitt's (2001) justice scales assessed procedural justice, distributive justice, interpersonal justice, and informational justice (reliabilities = .87, .93, .91, and .90, respectively). Items from Lewicki, Saunders, Minton, and Barry (2002) assessed the trust between parties (reliability = .91).² Participants recorded their settlement satisfaction, willingness to negotiate again with same partner, and subjective disconfirmation using single-item measures from Oliver et al. (1994). Students completed these surveys before the classroom discussion in which they learned how their outcomes compared with others in

their role, given that real-world negotiators evaluate their performance and experience in the absence of specific comparative information.³

Behavioral measures. Just before the end of the course, students completed two measures that served as behavioral and semibehavioral assessments of their negotiation counterparts from the mixed-motive exercise. First, students completed a teammate preference ranking of all three previous in-class exercise negotiation counterparts. This provided the instructor with preferences for actual use to determine the student's teammate in a team-on-team exercise, the results of which contributed to their course grade. Thus, participants voted "with their feet" to indicate interest in working with their counterpart in a future cooperative venture, to negotiate together against another student team. At the same time, they also made behavioral intention ratings of each of their previous counterparts, recording their opinion of the counterpart's worthiness for further professional contact using questions designed to represent networking activities typical among the alumni of top business schools:

1. Would you want to have this person as your business partner?
2. If you were considering whether or not to join a firm, and you found out that this person worked there, would that make you more or less likely to join?
3. If a friend asked your advice about whether to engage in a business transaction with this person, would you recommend doing so?
4. Years from now, if you ran into this person at a professional meeting, would you be likely to approach him or her?
5. How likely is it that you will seek to remain in contact with this person?

Responses were made on a scale ranging from 1 to 7 ($\alpha = .91$).

Results

Convergent and Divergent Validity

Table 5 shows the relationship between the SVI and the exercise results in terms of objective value (i.e., the instrumental outcome) and postnegotiation questionnaires. Because participants took part in the exercise in pairs, their individual data are nested within the dyad. Thus, Table 5 lists individual-level partial correlations with significance tests that correct for interdependence within dyads (Gonzalez & Griffin, 1999). We used Meng, Rosenthal, and Rubin's (1992) formulas for comparing correlated coefficients to test differences between these partial correlations.⁴

Relationships between the four factors of the SVI and additional postnegotiation questionnaires also suggest strong convergent and acceptable divergent validity. As predicted by Hypotheses 1 and 2, respectively, trust and willingness to negotiate again with same partner correlated most strongly with the Relationship factor of the SVI, although there was overlap with the Process factor that also

² In a separate pilot study, the Lewicki et al. (2002) Negotiation Trust scale also correlated highly with the subset of questions within the Organizational Trust Inventory (R. C. Mayer & Davis, 1999) that are applicable to dyadic negotiations (14 items; reliability = .93, $r = .87$).

³ We thank an anonymous reviewer for this point.

⁴ We thank Richard Gonzalez (personal correspondence, September 22, 2005) for his advice concerning the validation of this method.

Table 5

Partial Correlations Between the Subjective Value Inventory (SVI), Objective Value, and Postnegotiation Scales Completed for a Mixed-Motive Negotiation Exercise

Measure	Feelings about the					Total SVI	Discriminant validity (Z)
	Instrumental outcome	Self	Rapport				
			Process	Relationship	Overall		
Objective value	.26_a	.02 _b	.17 _a	.07 _b	.12	.16	2.25*
Trust	.42 _b	.31 _b	.59 _a	.58_a	.61	.56	2.00*
Subjective disconfirmation	.73_a	.50 _b	.57 _b	.46 _b	.54	.66	3.98**
Outcome satisfaction	.80_a	.60 _b	.63 _b	.53 _b	.61	.75	4.42**
Willingness to negotiate again	.54 _b	.41 _b	.69 _a	.74_a	.75	.71	3.34**
Justice	.63	.48	.72	.71	.75	.75	
Procedural	.54 _a	.50 _a	.63_a	.65 _a	.67	.68	1.06
Distributive	.65_a	.38 _b	.50 _b	.41 _b	.48	.57	3.57**
Interpersonal	.39 _b	.34 _b	.52 _b	.62_a	.60	.55	3.03**
Informational	.48 _b	.34 _b	.67_a	.63 _a	.68	.63	2.97**

Note. Values in bold indicate predicted convergent scales. Coefficients in the table are individual-level partial correlations with significance tests that correct for interdependence within dyads (Gonzalez & Griffin, 1999). All partial correlations are significant at the .05 level unless italicized. Values for the four factors that do not share a subscript differ from each other at the .05 level, using Meng, Rosenthal, and Rubin's (1992) formulas for comparing overlapping correlations. Discriminant validity refers to the contrast test that compares the value for the predicted convergent scale with that of all other scales, using Meng et al.'s method. $N = 106$ individuals in 53 dyads.

* $p \leq .05$. ** $p \leq .01$ (All two-tailed).

comprises Rapport. In support of Hypothesis 3, both subjective disconfirmation and outcome satisfaction were most strongly related to the Instrumental factor. Hypothesis 4 was not supported, as procedural justice was not significantly more strongly related to the Process factor than to the rest of the SVI. However, as predicted by Hypotheses 5 and 6, respectively, distributive justice was most strongly related to the Instrumental factor and interpersonal justice to the Relationship factor. Addressing Hypothesis 7, informational justice was more closely related to the Process factor, although there was also overlap with the Relationship factor. Finally, addressing Hypothesis 8, objective value correlated significantly with Feelings About the Instrumental Outcome—suggesting that participants had a sense of their performance, albeit an imperfect sense—but did not correlate with the Self, Process, or Relationship factors. This indicates that the SVI does not merely tap common method bias relating to global satisfaction anchored in perceived negotiation performance. In support of Hypothesis 9, the above correlations were nearly always significantly greater in magnitude for the theoretically related factor of the SVI than for the factors of the SVI not specifically predicted to converge. Taken together, these patterns suggest that the particular factors of the SVI, although correlated with each other, appear to have nonoverlapping variance that addresses distinct constructs previously represented in the research literature on negotiations.

As further evidence for the divergent validity of the SVI, in support of Hypothesis 10, Table 6 presents partial correlations between the SVI and personality traits. Because these traits are individual differences and the SVI addresses a relational construct regarding the outcomes of an interpersonal interaction with a randomly assigned partner, the small correlations in Table 6 are noteworthy and suggest that the SVI does not merely tap common method bias relating to global factors such as agreeableness or scale usage tendencies (Podsakoff et al., 2003). To demonstrate that feelings about negotiation performance encompass more than

strictly quantifiable outcomes, we conducted an additional analysis using a multilevel linear regression model with Kashy and Kenny's (2000) actor-partner interaction model to account for interdependence among negotiators within a dyad.⁵ Feelings about the instrumental outcome appear to be a function of not only the actual instrumental outcome ($\beta = .19, p < .01$) but also of two of the other three factors of the SVI (Self $\beta = .30, p < .01$; Process $\beta = .47, p < .01$; Relationship $\beta = .09, ns$).

Predictive Validity

The behavioral measures indicated actual and intended expressions of interest in working together again with negotiation counterparts. Table 7 summarizes the results of linear regression models using Kashy and Kenny's (2000) actor-partner interaction model to account for dyadic interdependence. These models predict actual and intended relationship continuation on the basis of the subjective and objective outcomes from the participant and counterpart. Providing support for Hypothesis 11, participants reporting higher subjective value reported significantly higher teammate preference rankings to work together in a future cooperative task. By contrast, participants' actual objective outcome of the negotiation had no such impact on teammate preference rankings. For ratings of behavioral intentions, similarly, participants reporting greater subjective value expressed greater intentions to maintain a positive professional connection with their counterpart. In addition, we conducted similar actor-partner interaction model regressions of partner rankings and behavioral intentions on each of the four SVI subscales separately and found the same pattern of results in predicting teammate preference rankings ($\beta = .32, p <$

⁵ We thank an anonymous reviewer for suggesting these additional analyses.

Table 6
Partial Correlations Illustrating Divergent Validity Between Personality Traits and the Subjective Value Inventory (SVI) Completed for a Mixed-Motive Negotiation Exercise

Personality trait	Feelings about the					Total SVI
	Instrumental outcome	Self	Rapport			
			Process	Relationship	Overall	
Machiavellianism	-.05	-.13	-.04	-.12	-.09	-.10
Openness	.08	.14	.15	.22*	.20†	.17
Conscientiousness	.19	.16	.06	.03	.05	.13
Extraversion	.07	-.16	-.05	.02	-.01	-.02
Agreeableness	-.05	.09	.02	.09	.06	.04
Neuroticism	.06	.09	.11	.18†	.15	.13

Note. Coefficients in the table are individual-level partial correlations with significance tests that correct for interdependence within dyads (Gonzalez & Griffin, 1999). *N* = 106 individuals in 53 dyads.
 † *p* ≤ .10. * *p* ≤ .05 (all two-tailed).

.01; β = .27, *p* < .05; β = .51, *p* < .01; and β = .48, *p* < .01, for the Instrumental, Self, Process, and Relationship factors, respectively) and behavioral intentions (β = .22, *p* < .05; β = .29, *p* < .01; β = .61, *p* < .01; and β = .69, *p* < .01, for the Instrumental, Self, Process, and Relationship factors, respectively). Objective outcomes did not show an association in any of these analyses (all βs < .17, *ns*). Finally, to demonstrate that the SVI has predictive validity above and beyond the justice scale with which it is highly correlated, both factors were entered together in a multilevel regression of behavioral intentions and both were significant positive predictors (βs = .39 and .29, *ps* < .01, for the SVI and justice, respectively).⁶

Discussion

Study 4 provides preliminary evidence demonstrating that the new SVI is a worthwhile and valid tool to assess the subjective element of negotiations. The SVI's four factors—Feelings About

the Instrumental Outcome, Feelings About the Self, Feelings About the Negotiation Process, and Feelings About the Relationship—appear to converge as predicted with theoretically relevant constructs examined in prior negotiations research (e.g., Colquitt, 2001; Lewicki & Stevenson, 1997; Oliver et al., 1994). The inherently relational and situational SVI also diverges from stable individual difference measures such as Machiavellianism (Christie & Geis, 1970) and the Big Five personality traits (Langford, 2003; McCrae & John, 1992).

Particularly noteworthy were the predictive validity findings demonstrating that greater subjective value following a negotiation predicts greater subsequent willingness to engage in cooperative interactions with the same negotiation counterpart. Participants responding with higher values on the SVI were more likely to choose their counterpart as a partner with whom to work together against another team when part of their actual course grade was at stake. In fact, subjective value was a better predictor of inclination toward such future interaction than was instrumental value. This finding speaks to the great value of subjective value, an element often overlooked in negotiations research that focuses strictly on bargaining agreements. The finding also speaks to the enduring nature of subjective value over time—apparently, more enduring than objective outcomes. Participants completed the SVI shortly after the negotiation yet recorded their teammate preferences weeks later. Finally, this finding speaks to the validity of the SVI as a survey instrument—both in terms of participants' ability to introspect about subjective value as well as their willingness to report these feelings—in that the SVI strongly predicted a later rating that had real consequences for participants.

General Discussion

This research contributes to a comprehensive framework of social psychological outcomes in negotiation. Using a combination of inductive and deductive methods and involving participants ranging from students and community members to negotiation practitioners, we attempted to answer the question “What do

Table 7
Subsequent Behavioral Measures of Participant's Desire for Future Cooperation as Predicted by Subjective and Objective Value From a Mixed-Motive Negotiation Exercise

Predictor	Model 1: teammate preference ranking	Model 2: behavioral intention rating
Participant's		
Subjective value	.48**	.54**
Objective value	-.05	-.11
Counterpart's		
Subjective value	-.04	.03
Objective value	.08	.07
Model diagnostics		
Pseudo <i>R</i> ²	.23	.38
-2 log likelihood	228.0	208.2

Note. All terms except model diagnostics are individual-level standardized regression coefficients (betas) with significance tests that control for interdependence within dyads (Kashy & Kenny, 2000). Complete data available for 92 individuals in 46 dyads.
 ** *p* ≤ .01 (two-tailed).

⁶ We thank an anonymous reviewer for suggesting this analysis.

people value when they negotiate?" Whereas the study of subjective value is not itself new to the field of negotiation, this is the first attempt to connect this range and breadth of concepts, to probe inductively for possible blind spots, and to provide future researchers with a valid and efficient tool to standardize the measure of noninstrumental consequences of negotiation. The four-factor model of subjective value that emerged included (a) feelings about instrumental outcomes (e.g., outcome satisfaction and distributional fairness), (b) feelings about the self (e.g., saving face and living up to one's own standards), (c) feelings about the negotiation process (e.g., fairness and voice), and (d) feelings about the relationship (e.g., good impressions and a solid foundation for the future). The relationship and process factors also appeared to be subfactors of a larger construct of rapport. This model also served to empirically validate previous conceptual frameworks used to describe social psychological measures in negotiation (Oliver et al., 1994; Thompson, 1990).

Empirical findings suggested, intriguingly, the understated value of subjective value. Participants in Study 1 reported a diverse range of negotiation goals. Although subjective value was less salient, it was no less important to negotiators than objective metrics of their performance. Although tangible terms of agreements appeared more frequently than any other single factor, in open-ended responses 1 in 5 participants did not mention any tangible outcomes at all. These findings suggest that researchers may dramatically underrate subjective outcomes in negotiation given their real-world importance. In Study 4, subjective value was a better predictor than objective value of negotiators' future behaviors and intentions. Participants reporting high subjective value were more likely weeks later to choose their counterpart for a future cooperative interaction that had real stakes, and they were also more likely to report plans to maintain a professional relationship. This finding also speaks to the validity of the SVI instrument, given that participants were able and willing to self-report responses that later correlated strongly with consequential choices. A third particularly noteworthy finding concerns the significant—yet low—correlation between feelings about instrumental outcomes and those outcomes themselves. This suggests the difficulty, even in the controlled setting of an in-class negotiation exercise, to gather and process accurate information about one's objective performance.

Limitations

The biggest limitation of this research program is, simply put, whether negotiators value what they say they value. We relied on self-report in the open-ended generation of subjective value factors in Study 1, their mapping in Study 2, and the use of response scales in Studies 3 and 4. We address this concern in two ways. Conceptually, we argue that what people say they value in a negotiation itself is important. The accuracy of such accounts could not truly be evaluated without losing meaning (e.g., Ross, 2001; Ross & Nisbett, 1991). To obtain an immediate and direct method to ascertain a participant's accuracy in reporting subjective value would represent a paradox—that of providing an objective criterion against which to compare inherently subjective value. Indeed, the question of how to measure and track subjective experience is a current focus of a growing volume of research on

well-being and hedonic science (Diener, 1984; Kahneman, Diener, & Schwarz, 1999; Schwarz & Strack, 1999), grappling with similar issues of self-report, such as self-presentation and social desirability. Just as Diener (1984, 1994) and colleagues have argued that people are considered happy to the extent that they subjectively believe themselves to be happy, we believe that introspection is the gold standard for assessing subjective value. Thus, traditional measurement strategies such as the multitrait-multimethod approach (Campbell & Fiske, 1959) would not be applicable to subjective value. Although subjective well-being has been assessed using self-reports and peer reports from family members and friends for cross-validation (e.g., Pavot, Diener, Colvin, & Sandvik, 1991; Sandvik, Diener, & Seidlitz, 1993), it can be argued that those around us have an informed perspective on our life satisfaction because it is visible to others. By contrast, it is not clear that peers would have an informed perspective on a negotiator's subjective value beyond hearsay from the negotiator him- or herself. Any behavioral manifestations available for peers to observe (e.g., relationship continuation) are conceptually distinct consequences rather than alternate measurements of subjective value.

That said, we bear the burden to demonstrate that participants are willing and able to report their subjective value, and we do so empirically in Study 4. To maintain that participant responses are driven by more than declarative knowledge and folk beliefs that may be valid internally but not with respect to actual future behaviors, we present initial data demonstrating the SVI is a strong predictor of future choices with real consequences for participants. The selection of a teammate for a team-against-team negotiation had genuine stakes in a class for which objective point scores in classroom exercises were the sole determinants of students' grades. Thus, the strongly positive findings demonstrate participants were capable and willing to report accurately about their subjective value. Self-reports, whatever their underlying attribution process, have an inherent validity or interest to researchers when they predict important consequences for individuals.

A second limitation of the current research program was the use of student samples to examine the factor structure of the SVI instrument and provide initial data on its reliability and validity. Although such samples are representative of much of the body of negotiations research, students may differ in the focus and importance they place on various factors of subjective value. More research including practitioners and community members would be worthwhile before assuming that the SVI instrument generalizes unchanged for use with wider populations. We speculate that the use of student samples in Studies 3 and 4 may have contributed to the relative weakness of the distinction between the Process and Relationship components of subjective value. Indeed, the popular book *Getting to Yes* (Fisher, Ury, & Patton, 1991) focuses on the need to train negotiators to separate the person from the situation—suggesting that these two concepts are theoretically distinct but empirically confounded, particularly for novice negotiators. Furthermore, wording in the Relationship questions attempted to separate negotiators' working relationship from idiosyncratic liking. This may have focused participants on the negotiation process, thus limiting the distinction participants made between these two elements of rapport.

Future Research

The results of these studies suggest a number of avenues for further research. First, the systematic approach taken by the current investigation points to the relatively less investigated areas within subjective value. Notably, feelings about the self emerged as a distinct independent factor, and its relatively lower interitem consistency suggests it is complex and multidimensional. Yet, of the four components of subjective value, Self encompasses the smallest existing research literature within negotiations. Newer work on the role of face threat as well as stereotype threat and stereotype confirmation has attempted to remedy this gap (e.g., Kray, Thompson, & Galinsky, 2001; White et al., 2004).

Likewise, the field would benefit from greater understanding of feelings about instrumental outcomes. How to know whether you succeeded in a negotiation is critical. The current empirical findings suggest that such knowledge is imperfect, revealing only a modestly sized partial correlation of .26 with objective outcomes themselves. Yet such knowledge is crucial for learning: Experience can be a lousy teacher if one's conclusions about that experience are flawed. Research on counterfactual reasoning has found that individuals engage in valuable counterfactual thinking as a result of negative affect and misfortune (e.g., Galinsky, Seiden, Kim, & Medvec, 2002; Lipe, 1991; Roesse, 1997). But what if negotiators are not able to diagnose their own misfortunes accurately? If subjective feelings about success and failure trigger counterfactual reasoning, then a greater understanding of subjective value is a critical component underlying theories of feedback and negotiator learning and training.

The development of the SVI also offers researchers the chance to further examine how the various elements of subjective value may interact with each other. For example, recent work on procedural justice has suggested that feelings about an instrumental outcome may more strongly reflect onto feelings about one's own skills and competence as a negotiator when one believes that the process was fair (Brockner et al., 2003).⁷

More research exploring the consequences of subjective value would be worthwhile. Earlier, we speculated that one value of subjective value is that it may feed back positively into future economic outcomes. Such a speculation awaits more complete testing than the preliminary results presented in Study 4. A basic question is whether the suggestive finding, that subjective value was a stronger predictor than objective value of important future consequences, would replicate in contexts with greater personal stakes for negotiators. A more detailed question concerns the boundary conditions of such an effect: Under what circumstances should subjective value be a good predictor of future instrumental outcomes?

Furthermore, more research should explore the precursors of subjective value. What leads to greater feelings of personal reward from a negotiation? Cognitions such as norms, expectations, aspirations, and preferences are likely to play a key role. Similarly, work should examine structural issues such as the relationship among the parties, likelihood of future interaction, the subject and setting of the negotiation, the issues to be decided, and the medium of communication. Finally, individual differences such as personality factors, culture, and other demographic background characteristics may influence subjective value. For example, formative research on the role of emotional intelligence (e.g., J. D. Mayer,

Salovey, & Caruso, 2000) in negotiation suggests that emotional intelligence represents an asset for negotiators, particularly insofar as negotiators with high emotional intelligence seem capable of inducing their counterparts with positive affect, even after controlling for instrumental outcomes (Curhan & Mueller, 2006). Even for researchers who do not focus on subjective value per se, including it as an outcome measure provides the potential to observe the consequences of particular experimental manipulations on subjective experience. In examining how subjective value arises in a negotiation, it is also important to take a process orientation and to examine the behaviors that take place—for example, the strategies and tactics used, whether parties are cooperative versus competitive, how they share information, and other factors. It is worthwhile to examine not only the tactics that lead to negotiators' own subjective value, but also the tactics that negotiators can use to increase the subjective value of their counterparts. Typologies of negotiation processes such as that of Olekalns, Brett, and Weingart (2003) would be ideal for addressing such questions. Even before the negotiation itself, negotiators may anticipate their level of subjective value and may make predictions—correct or incorrect—and consequently choices in an attempt to maximize their subjective value.⁸

Practical Implications and Interventions

Given the widespread importance of effective negotiating, how can we put to use an understanding of subjective value? Study 1 suggests that the objective terms of an agreement may be more salient than other factors, but perhaps no more important. This raises the question of what might happen by focusing negotiators' attention on subjective value. However, we argue that more work would be necessary to validate any intervention approach. Ironically, merely focusing on one's subjective value can have a counterproductive impact on it. Conlon and Hunt (2002) found that representing outcomes to participants in terms of smiling and frowning faces—rather than numerical payoff grids—resulted in greater emotional involvement, but this greater involvement led, in turn, to longer negotiation times and higher impasse rates. They argued that high rates of disagreement in real-world negotiations are consistent with greater emotional involvement outside of controlled research settings. We speculate that interpersonal skills such as emotional intelligence may serve to moderate such findings—in which the conventional wisdom that emotional involvement is detrimental for reaching agreements may hold in the case of low emotional intelligence but that focusing on subjective value and increasing emotional involvement could benefit negotiators with high emotional intelligence. We hope that the promising findings of the current article will serve as a call for research that can develop and support nuanced recommendations about the methods and contexts in which negotiators should focus on their subjective value in order to improve the outcomes and experience of their interactions.

⁷ We thank an anonymous reviewer for raising this idea.

⁸ We thank an anonymous reviewer for this idea.

Conclusion

The purpose of this article has been to present a comprehensive framework of the range of inherently social psychological outcomes in negotiation, which serves as a complement to more tangible, instrumental, or economic outcomes. It is our hope that such a framework serves to encourage, systematize, and facilitate research that looks beyond economic exchange as the consequence of interpersonal negotiations. The field of negotiations has been a uniquely interdisciplinary pursuit, eagerly incorporating perspectives from economics, law, organizational behavior and industrial relations, sociology, and psychology. The current research aimed to put a social psychological stamp on the study of negotiation outcomes.

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(Appendix follows)

Appendix

Instructions for Use of the Subjective Value Inventory 16-Item Questionnaire

Instructions for Participants

General Instructions: For each question, please circle a number from 1 to 7 that most accurately reflects your opinion. You will notice that some of the questions are similar to one another; this is primarily to ensure the validity and reliability of the questionnaire. Please simply answer each question independently, without reference to any of the other questions.

Important: If you encounter a particular question that is not applicable, simply circle "NA." Even if you did not reach agreement, please try to answer as many questions as possible.

Administration of the Subjective Value Inventory

Items can be presented in any order. However, the order shown in Table 2 is recommended. No headings should be used (e.g., Feelings About the Instrumental Outcome). The version presented in Table 2 is intended for negotiations involving two or more individuals. When the focal negotiation

involves only two individuals, the words *counterpart(s)* and *outcome(s)* should be changed to *counterpart* and *outcome*, respectively.

Scoring of the Subjective Value Inventory

Items 3 and 5 should be reverse-scored (i.e., a response of 7 becomes 1, a response of 6 becomes 2, etc.). Next, items within each of the four subscales should be averaged (with equal weightings) to yield four subscale scores (i.e., Instrumental, Self, Process, and Relationship). If desired, a Global score can be calculated by averaging (with equal weightings) these four subscale scores. A Rapport score may also be calculated by averaging scores for Process and Relationship (with equal weightings).

Received January 14, 2005

Revision received November 3, 2005

Accepted January 30, 2006 ■