Paths to Negotiation Success

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Abstract

This article presents a multi-variable model of the negotiation process and tests it via a series of meta-analyses and follow-up path analyses. Negotiator goals, relationships, expectations, and behavior are tested as predictors of (a) the profit-or-loss outcome of the negotiation, (b) the negotiator's perceptions of the other party, and (c) the negotiator's satisfaction with the negotiation. A path model was tested based on separate meta-analyses to create the correlation table of the seven variables. The findings demonstrate that to be successful, negotiations should focus on goals and cooperation within the negotiation. High goals and positive relationships started negotiators on the path to successful outcomes.

Introduction

Despite extensive literature relating to the psychological study of negotiation, more work is needed in creating and testing comprehensive models of the negotiation process and resulting outcomes. This is difficult in part due to the complexity of negotiations and the many influences that surround a negotiation. To deal with the complexity, researchers must focus on a limited number of relationships. No single empirical study can reasonably be expected to test causal relationships among a large number of interrelated variables.

At some point, however, it becomes useful to gather and summarize these individual contributions in an overall framework or model. Modeling the negotiation process offers a new way to look at the research, which is the primary goal here. This article presents a model of negotiation that is both comprehensive and testable via a series of meta-analyses and a follow-up path analysis. This is a relatively recent approach to integrating research findings and model testing that appears to hold much promise for assessing multiple mediating variables. Hunter and Schmidt (1990) point out that ''the relationships revealed by meta-analysis—the empirical building blocks for theory—can be used in path analysis to test causal theories'' (p. 40). Furlow and Beretvas (2005) agree,

stating that "the combination of meta-analytic techniques with SEM provides a unique method for theory building" (p. 227). A number of authors provide specific guidelines for this combination of analytic approaches (Becker & Schram, 1994; Cheung & Chan, 2005; Cook et al., 1992; Viswesvaran & Ones, 1995). This model-driven meta-analysis addresses the complexity of the topic by including several variables and examining their interactions. Further, this model-driven synthesis can indicate gaps in research, refine models, and direct further research (Becker, 1992). While any particular study has a primary interest in only a limited number of variables, this method examines a more complete model by pooling studies.

The combined meta-analysis/SEM approach has been used in a number of areas of psychology. Within the Organizational Psychology literature, it has been used to investigate models of unionization (Premack & Hunter, 1988), job performance (Schmidt, Hunter, & Outerbridge, 1986), turnover (Hom, Caranikas-Walker, Prussia, & Griffeth, 1992), job satisfaction (Brown & Peterson, 1993), substitutes for leadership (Podsakoff, MacKenzie, & Bommer, 1996), training (Colquitt, LePine, & Noe, 2000), organizational climate (Carr, Schmidt, Ford, & DeShon, 2003), and work–family conflict (Ford, Heinen, & Langkamer, 2007), among others.

Modeling Negotiation

This article presents a model of the negotiation process and tests it via a series of meta-analyses and a follow-up path analysis. A hypothesized model is shown in Figure 1 and includes seven variables: (a) relationship between negotiators, (b) negotiator goals, (c) expected cooperation, (d) cooperation behavior, (e) negotiator profit, (f) satisfaction with the negotiation, and (g) perceptions of the other party. The model has three types of outcomes (profit, negotiator satisfaction, and negotiator perceptions of bargaining
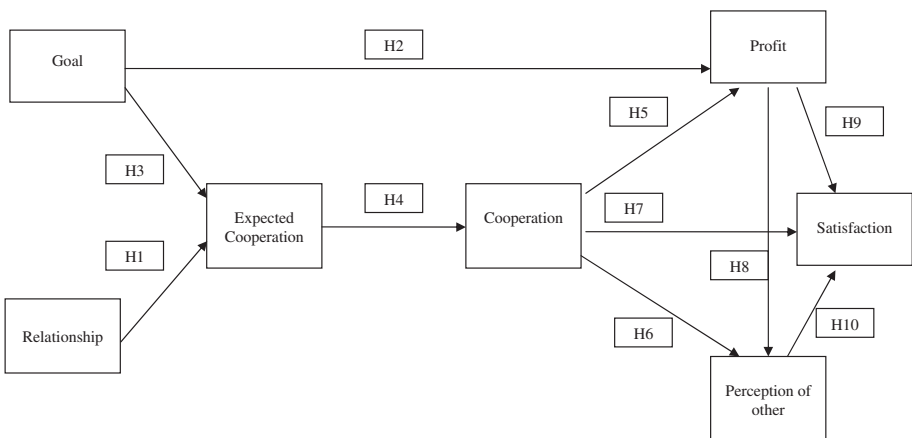

Figure 1. Hypothesized model.

opponent) as well as direct and indirect effects of variables on the three outcome variables.

While there are many variables that could be included in the model, these variables were chosen for several reasons. First, conceptually, each of these variables directly or indirectly relates to the processes or outcomes of negotiation. We will discuss these links later. Second, these variables are present in most, if not all, negotiations. This initial model can serve as a foundation to examine more unique negotiation situations. Here, we focus on multi-issue negotiations that offer tradeoff (or integrative) potential. Finally, and critical for the model testing, each of these variables has been measured or manipulated with some frequency in existing empirical studies of negotiation. It is important to note that the method relies on available primary research reports, and is therefore limited to research that has been done. While individual studies examine a subset of variables, using meta-analysis allows us to pool results across studies and model all seven variables simultaneously.

Negotiation Outcomes

The model in Figure 1 includes three conceptually distinct outcomes of negotiation: profit, perceptions about the other party, and negotiator satisfaction. These outcomes can be considered as endpoints of a negotiation cycle.

Negotiator profit

Of the three outcome variables, profit has received the most attention in research and in practice. Negotiator profit is the objective amount or the absolute value of the settlement reached by the negotiator. This objective profit influences the other outcomes. Profit, however, is not expected to be the sole cause of negotiation satisfaction and perceptions.

Perceptions About the Other Party

Perceptions of the other party are important outcomes to a negotiation. Personal evaluations are likely to be remembered long after dollar amounts and resource distributions are forgotten. Perceptions cover a number of subjective attitudes, or opinions one negotiator may hold about the other party. Some examples include perceptions of trustworthiness, likeability, cooperativeness, inquisitiveness, and competitiveness (e.g., De Dreu, Giebels, & Van de Vliert, 1998; Esser, Walker, & Kurtzweil, 1991; Shapiro & Bies, 1994; Tutzauer, 1990).

Negotiator Satisfaction

Satisfaction is a third important outcome in negotiation. Satisfaction is influenced by objective profits as well as the behaviors within the negotiation. We consider both satisfaction with the objective outcome of the negotiation (i.e., profits), as well as

satisfaction with the negotiation task, with one's own performance in the negotiation, and with the fairness of the outcome (Allred, Mallozzi, Matsui, & Raia, 1997; Curhan, Elfenbein, & Xu, 2006; Oliver, Balakrishnan, & Barry, 1994; Watson & Hoffman, 1996).

Predictors of Negotiation Outcomes

Much negotiation research has focused on the nature of the interaction between the negotiators and the goals that the negotiators have (or are given by a third party) prior to entry into the bargaining process. The next section discusses the variables that have been shown to predict the outcomes of a negotiation and how they are related to each other.

Negotiator Relationships

While negotiator "relationships" can be conceptualized in a number of ways, we see this construct as a consistent pattern of ongoing interaction between people. This includes individuals who are friends, family members, business colleagues, or who interact repeatedly over a period of time. It includes both interactions prior to the negotiation task being investigated as well as the expectation of future interaction following the task.

Most economic models of behavior assert that the behavior of rational, self-interested individuals is only minimally affected by social factors (Granovetter, 1985). Most researchers in the area interpret the data differently while pointing to the lack of research on relationships in negotiation. Fry, Firestone, and Williams (1983) point out that psychological theory regarding relationships leads to two potentially contradictory predictions. First, a positive relationship should promote optimistic expectations and therefore free the parties to focus their energy on coordination rather than opposition. Indeed, positive relationships are associated with capacity for empathy (Greenhalgh & Gilkey, 1993), trust and long-term focus (Mannix, Tinsley, & Bazerman, 1995), cohesiveness (Peterson & Thompson, 1997), and enhanced communication (Northcraft, Preston, Neale, Kim, & Thomas-Hunt, 1998). A long-term relationship between negotiators encourages accommodation between the parties and inhibits exploitative behavior (Ben Yoav & Pruitt, 1984). For example, Marlowe, Gergen, and Doob (1966) found that negotiators who expected to interact in the future tended to be less exploitive than negotiators who expected no future interaction. Committing to future interaction led to less rejection of influence attempts by that other individual (Pallak & Heller, 1971). Sondak and Moore (1993) found that individuals were more likely to cooperate than compete if the relationship was long-term as opposed to short-term.

In contrast, even an on-going positive relationship among parties might prove distracting and interfere with problem-solving (Fry et al., 1983). Coleman (1988) argues that social relations are so powerful that they facilitate certain activities but hinder others. In particular, a strong and familiar interpersonal relationship may reduce the amount of information one seeks in social situations, or cause one to be less mindful of

personal goals or outcomes (Tenbrunsel, Wade-Benzoni, Moag, & Bazerman, 1999). Thompson and Kim (2000) found that the relationship between negotiating parties even affected the recommendations made by a third-party observer. With a relationship, parties may become less assertive, less demanding, and more conflict-avoidant. A number of studies have found such an effect, with relationships being associated with lowered levels of individual and/or joint outcomes (Fry et al., 1983; Northcraft et al., 1998; Peterson & Thompson, 1997; Polzer, Neale, & Glenn, 1993; Sondak, Neale, & Pinkley, 1995). However, exceptions to this trend are also found (Ben Yoav & Pruitt, 1984; Griffith & Northcraft, 1994).

It should be noted that not all prior relationships are positive. What if the negotiators have interacted in the past and that initial interaction was a negative experience for one or both of them? In such a case, the existence of a prior relationship may hinder, not help, the current negotiation. However, research that has measured or manipulated the relationship between the negotiating parties has overwhelmingly operationalized relationship in a dichotomous manner—either a positive relationship exists, or it does not. Negative relationships, while likely a strong influence on the process, have not typically been empirically examined. For these reasons, the proposed model uses ''relationship'' to indicate a positive, or at least neutral, pattern of interaction that has existed prior to the negotiation and/or is expected by the parties to continue to exist following the negotiation.

Relationships → Expectations of Cooperation

Prior positive relationships and/or the expectation of future interaction enhance the expectations of cooperation, although not necessarily the outcomes of the negotiation. Clearly, the dynamics of past and future relationships are not identical. Greenhalgh (1987) indicates that when future interactions are expected, there is less urgency to ''win'' in current negotiations. In this situation, it is also likely that a negotiator will operate under norms of reciprocity and will thus anticipate retaliation in the future for lack of cooperation in the present. Past relationships, in contrast, mean that the parties will come to the table with memories of previous interactions that may, in fact, invoke cooperative behavior if that is consistent with prior interactions. In either case, however, it is reasonable to expect that negotiators who have never worked together and do not expect to in the future will have less incentive to cooperate than those who see the present negotiation as just one in a series of interactions.

Figure 1 suggests that the relationship between the negotiators will directly influence the expectations and indirectly the process of the negotiation. Thus, with a relationship (i.e., the negotiators have had successful past interactions and/or expect future interaction with each other), the negotiation process will be expected to be more cooperative, and will be more cooperative, than when the relationship is short-term (i.e., there is no relationship outside of the immediate negotiation situation). Specifically,

Hypothesis 1: The presence of a positive or neutral relationship between negotiators will be associated with higher expectations of cooperation than no relationship.

Negotiation Goals

In some situations, negotiators will be striving to achieve a goal. In others, there may not be a goal, only a ''do your best'' expectation. Much theory and research supports the effect of goals on outcomes. While negotiation researchers have looked at goals in a number of ways, we considered Locke, Shaw, Saari, and Latham's (1981) definition of a goal as ''what an individual is trying to accomplish; it is the object or aim of an action'' (p.126). Thus, in negotiation, aspirations, bottom lines, target points, and resistance points all fit the definition of a goal (see Zetik & Stuhlmacher, 2002 for more on the history of goals, aspirations, and goal theory in negotiation). We propose that goals influence objective outcomes (profit) as well as expectations about an upcoming negotiation.

Negotiation Goals → Profit

The goal-setting literature provides ample evidence that goals increase performance (Locke & Latham, 1990; Locke et al., 1981; Mento, Steel, & Karren, 1987; Tubbs, 1986). Difficult goals motivate performance more than easy or nonexistent goals. In fact, the proposition that goals increase performance is arguably one of the best-documented relationships in organizational psychology (Locke & Latham, 1990). In negotiation, research on goals has been consistent with these findings. Several studies (e.g., Neale & Northcraft, 1986; Northcraft, Neale, & Early, 1994) have shown that negotiators who have an outcome goal achieve better outcomes than negotiators who have no goal. Other studies indicate a positive relationship between goal difficulty and negotiation profit (e.g., Bazerman, Magliozzi, & Neale, 1985; Huber & Neale, 1986; Neale & Bazerman, 1985a). As further evidence, meta-analytic results (Zetik & Stuhlmacher, 2002) found that goals were related to substantially increased profit compared with the absence of goals in negotiation.

Our second hypothesis follows directly from the goal-setting literature:

Hypothesis 2: The presence of negotiator goals for profit, compared to no goals or easy goals, increases negotiation profit.

Negotiation Goals → Expectations of Cooperation

The goal-setting literature is less clear about the effects of goals on negotiation expectations and behaviors (Zetik & Stuhlmacher, 2002). Some would suggest that difficult goals set up a competitive orientation. Others argue that difficult goals may lead to a problem-solving orientation where cooperation is required.

In negotiation, meeting one's own goals generally requires working with others. When a bargaining situation has integrative potential (i.e., an integrative solution is, in fact, possible), negotiators are often given implicit or explicit instructions to reach that integrative solution by using tactics that might include considering the positions, needs, and goals of the other party. If negotiators have to reach a difficult agreement with the other party, integration is necessary for both parties. Polzer and Neale (1995) suggest that as goals become more difficult, negotiators become more creative and explore new options

to achieve those goals. In such a situation, negotiators become more integrative in their bargaining process, with increased levels of cooperation and a diminished adversarial focus. Negotiators with easy or nonexistent goals, however, are free to use the easiest, most familiar bargaining strategy. The default negotiation approach is likely to be distributive and hence competitive (Bazerman & Neale, 1983; Thompson & Hastie, 1990).

Thus, Figure 1 proposes that the presence of negotiator goals directly influences the cooperative nature of the negotiation process, and indirectly influences the three outcome variables. The presence of negotiator goals is expected to increase the likelihood of cooperation, in order to achieve the desired integrative resolution. Thus,

Hypothesis 3: Goals directly increase the cooperation expected prior to a negotiation compared to easy or no goals.

Cooperation

Negotiation behaviors vary by levels of cooperation and competition. Whether stated or tacit, most negotiators enter the process with some mixture of expecting cooperation with their partner to reach a mutually desirable outcome and expecting to compete to gain the best outcome for themselves.

Expected Cooperation → Cooperation

An expectation of the opposing party's behavior influences a negotiator's initial behavior. For example, Deutsch's (2000) theory of cooperation and competition frames the relationship between expected cooperation and cooperative processes as self-fulfilling prophecy. Framed negatively, this self-fulfilling prophecy begins with an assumption that the opponent is preparing to do harm. This expectation leads one to behave in a hostile manner, which provokes the other negotiating party to reciprocate with hostility. Framed positively, individuals who enter a negotiation situation with expectations of cooperation will likely behave in a mutually reinforcing constructive manner. As a result, negotiators who expect cooperation would be more cooperative and will be more likely to achieve mutually beneficial outcomes. Thus, expectations of cooperation lead to mutually reinforcing negotiation behaviors.

Regardless of how expectations are conceptualized, the empirical literature has consistently found a relationship between expected cooperation and cooperative negotiation process. Expected cooperation has been related to information exchange (De Dreu, Koole, & Steinel, 2000; De Dreu et al., 1998; Kimmel, Pruitt, Magenau, Konar-Goldband, & Carnevale, 1980), cooperative verbal behavior (Sheffield, 1995), and attempts at problem-solving (Watson & Hoffman, 1996). Dual Concern Theory (Pruitt & Rubin, 1986) predicts that a prosocial orientation (a focus on maximizing both parties' outcomes) results in more problem-solving and less contentious behavior in negotiation. Thus, there is substantial support for the positive relationship between expectations of cooperation and cooperative process. Expected cooperation is proposed as a precursor to cooperation in negotiation processes.

Hypothesis 4: Expected cooperation is predicted to have a direct effect on cooperative behaviors. Higher expected cooperation is hypothesized to be related to higher cooperative behaviors in the negotiation.

Cooperative Behavior → Outcomes

Negotiation behavior may include elements of cooperation as well as competition. At one end of this continuum, cooperation includes accommodating, collaborating, or problem-solving within the negotiation. Examples of cooperative behaviors could involve exchanging information, expressing concern for the opponent, or matching offers. In contrast, competition is aggressive and seen in behaviors such as making threats, insults, or large demands. Cooperative behavior tends to produce higher joint outcomes or integrative solutions than competition (e.g., De Dreu et al., 1998; Pruitt & Lewis, 1975) particularly when the parties are not under pressure to concede (De Dreu et al., 2000).

Other theoretical frameworks also predict how the cooperative nature of an interaction will influence satisfaction and outcomes. For example, Leader-Member Exchange (LMX) theory (Dansereau, Graen, & Haga, 1975) is focused on the relations between two people (e.g., a supervisor and subordinate). The basic premise of LMX is that the quality of the dyadic relationship predicts individual, group, and organizational variables. A meta-analytic review of the LMX literature by Gerstner and Day (1997) found that the quality of the dyadic relationship is associated with critical outcomes, including subjective performance ratings, objective performance, intentions to leave the position, and overall satisfaction. In short, high-quality interactions were consistently related to favorable individual outcomes.

This pattern of support for LMX behaviors can also be seen in the dyadic relationship between negotiating parties. Esser et al. (1991) found that cooperative negotiators were perceived as trusted and liked, while competitive negotiators were perceived as the most difficult to deal with, the least trusted, and the least liked. Competitive behavior leads to negative perceptions of the negotiating partner's social motivation (De Dreu et al., 2000). Noncooperative behaviors such as punishments, threats, and conflict avoidance are negatively correlated with postnegotiation trust (De Dreu et al., 1998). In short, cooperative negotiation behaviors are predicted to lead to positive perceptions of the negotiating partner.

Hypothesis 5:   Higher cooperation, in comparison to competition, in negotiation will directly lead to high objective outcomes (profit) in a negotiation with integrative potential.

Hypothesis 6: Cooperation in the negotiation will lead to negotiators being perceived favorably by their opponents.

Cooperation also influences the negotiator's level of satisfaction. Watson and Hoffman (1996) found competitive negotiation behavior was inversely related to satisfaction. LMX theory also supports the interpretation that positive interactions increase satisfaction.

Hypothesis 7: Cooperation directly influences the negotiators' satisfaction such that the higher the cooperation in the negotiation, the greater the satisfaction.

Profit → Perception of Other and Satisfaction

Objective outcomes are predicted to influence how the other party is perceived. This prediction is supported by a number of theories. One of these is Path-Goal theory (House, 1971; House & Mitchell, 1997). Based on expectancy theories of work motivation (e.g., Georgopoulos, Mahoney, & Jones, 1957; Vroom, 1964), Path-Goal theory considers the perceptions of how one person (e.g., a supervisor) helps fulfill another person's (e.g., a subordinate's) goals. If someone is seen as helping to achieve valued outcomes, satisfaction is increased and that person will be perceived more favorably. Thus, in negotiation, we predict that perceptions of the other are directly influenced by the outcomes. The other negotiator and the process will be seen as more acceptable and satisfying when they are seen as a providing a valued outcome or as instrumental for future satisfaction.

Hypothesis 8: Profit directly influences the perceptions of the other party in the negotiation, such that the higher the profit, the more positive the perception of the other party.

Hypothesis 9: Profit directly influences negotiator satisfaction, such that the higher the profit, the more satisfied the negotiator.

Perception of Other → Satisfaction

Perceptions of an opponent directly influence satisfaction with a negotiation. In addition to the literature in path-goal theory, negotiation researchers have linked perceptions of the other and satisfaction. Allred et al. (1997) found a significant relation between various perception measures and satisfaction with the negotiation. Kwon and Weingart (2004) documented a relationship between how the other party timed and justified concessions and negotiator satisfaction. Purdy, Nye, and Balakrishnan (2000) reported a correlation of .59 between the desire for future interaction with opponent and satisfaction with a negotiation's monetary outcome. Watson and Hoffman (1996) found that perceived satisfaction with one's partner was significantly correlated with overall satisfaction with final profit. This leads to the final hypothesis of our model:

Hypothesis 10: Perceptions about the other party directly influence the satisfaction with negotiation, such that the more positive the perceptions, the higher the satisfaction with the negotiation.

These ten hypotheses define the negotiation model in Figure 1. However, our intention was to frame a model and note support for various relationships within a more comprehensive model. In this way, the model in Figure 1 is more than the sum of its parts. It attempts to go beyond a standard literature review with the use of meta-analysis and structural equation modeling to generate and integrate existing negotiation research.

Method

Viswesvaran and Ones (1995) present a series of steps to guide theory testing using meta-analysis and structural equation modeling. Step 1 is to identify important

constructs and relationships, and that has been done, resulting in the ten hypotheses. Steps 2–4 involve identifying the measures used to operationalize each construct, obtaining studies reporting relevant data, and conducting meta-analyses to estimate the true score correlations between the measures. How this was done is discussed next.

The hypotheses are a subset of all possible interactions between variables; however, testing our model required data on all interrelationships. The intercorrelations of the seven variables were needed to test the hypothesized model via path analyses. Each entry in the correlation matrix was created from the results of a meta-analysis of the two variables. Twenty-one separate meta-analyses were required to create a correlation matrix showing the relationships between the seven variables. The correlation matrix was then used as input for the path analysis to test the fit of the overall model.

To perform the meta-analyses, empirical studies were sought that reported relationships between any two of the seven variables of the hypothesized model. Relevant words (e.g., aspiration, expectation, cooperation, competition, goal, outcome, profit, perception, relationships, friends, satisfaction win-win, integrative, and process) were paired with negotiation terms (e.g., negotiation, bargaining) in computer databases. Most of the articles located were found in PsycInfo (1967–2005). In addition, our search for potential studies included reference lists of various negotiation books, theoretical articles, and reports that were located. This search resulted in thousands of potential articles that were further screened.

To be included in the analysis, the study must have met the following criteria. First, the study must have used a negotiation task that had integrative potential. Integrative potential meant that tasks had more than one item under negotiation and the desired outcomes of the parties were not completely opposed. Studies involving matrix or zero-sum games were excluded as were all negotiations involving only one item. Participants in the study must have been college age or older. Appropriate data for calculating effect sizes must have been reported. Studies reporting only multiple regression analyses were omitted because the effect of any one variable in the model depends on the other variables in the model; therefore, the independent effect of a single variable cannot be determined.

Operationalization of Variables

Initial screening of studies was based on the descriptions provided by study authors. Final judgments about studies were made case-by-case based on *a priori* definitions of the variables. For most variables, several measures of the construct were considered, and are described below.

Negotiator Relationship
We collapsed all variations on relationships into two levels: either a relationship existed or it did not. Negotiators either had no interactions outside the confines of the study, or they (a) had an on-going relationship before the negotiation began, and/or (b) would have anticipated continuing interaction subsequent to the negotiation.

Goals

Several terms indicated a profit goal, including negotiator aspirations and target points (Zetik & Stuhlmacher, 2002). For the purposes of this meta-analysis, results were compared such that there must have been a ''goal'' versus ''low/no goal'' comparison. Because goal-setting theory suggests that having a goal will increase performance and that better goals are specific, accepted, challenging, and accompanied by feedback, the ''best'' goal manipulation (i.e., specific, difficult) was chosen as the contrast with low or no goals.

Expected Cooperation

''Expected cooperation'' was the negotiator's view of the potential for collaboration in the upcoming negotiation. Many studies directly asked participants to rate their expectations prior to negotiation. For example, some studies asked for expectations of friendliness, trustworthiness, competitiveness, or if the other party would be easy to understand, calm, or provocative (e.g., Benton, Gelber, Kelley, & Liebling, 1969; Druckman & Broome, 1991; Kimmel et al., 1980). Studies were included that either (a) assessed expected levels of cooperation or (b) manipulated the expected cooperation with instructions prior to the negotiation (e.g., De Dreu et al., 1998; Lewis & Fry, 1977; O'Connor, 1997; Pinkley & Northcraft, 1994; Sheffield, 1995).

Cooperation

Cooperation was operationalized as behaviors engaged in by the negotiators. The measures of cooperative behavior fell into two main categories: Offer/Concession and Communication. Offer/Concession variables examined the objective level of the offer made or the amount or number of concessions made. Communication measures typically related to the form or content of messages. An example of a communication measure is the number of competitive and cooperative messages in speech expressed as a frequency or percentage of total speech (e.g., O'Connor, 1997; Olekalns, Smith, & Walsh, 1996). Other communication measures of cooperation included information exchange, deceptive messages, threats, and statements of concerns (e.g., De Dreu et al., 2000; Thompson, 1990b).

Variables were reverse coded when needed, such as when threats or deceptive messages were reported. If behaviors relating to both offer and communication were measured, the combined average effect size was calculated. When possible, this average effect size was adjusted for the correlation between the measures to increase the stability of the estimate. Self-reports and perceptual measures were not included as behavior, although they may have fit the definitions of perceptions or satisfaction and are discussed later. Also, most articles used a unidimensional approach, such that cooperation and competition were measured as polar opposites. The reader may also be interested in models that view them as potentially occurring simultaneously or sequentially (see Janssen & van de Vliert, 1996).

Profit

Negotiation profit was defined as the objective outcome of the negotiation in the form of individual settlements. Profit was typically provided in terms of points or money

units. If individual profit was not reported, other indices were considered. Examples of these other indices include comparison of actual to possible agreement (Weingart, Bennett, & Brett, 1993), proportion of prenegotiation goal obtained (Jordan & Roloff, 1997), and profit difference between the negotiating parties (Olekalns et al., 1996).

Perception of Other

Opponents were rated on various characteristics such as honesty, trustworthiness, cooperation, aggression, likeability, and fairness. These data were gathered following the negotiation, using Likert-type questionnaires. Effects were coded such that positive perceptions were given higher ratings than negative perceptions.

Satisfaction

Negotiator satisfaction involved the attitudes about the outcome, process, or settlement reached. Rather than an objective measure of profit, satisfaction was a self-report measure by the negotiator following the negotiation.

Results

Effect Size Estimation

Standardized effect sizes were computed based on meta-analytic statistical methods of Hedges and Olkin (1985). The standard effect size computed for each study was *d*. Multiple effect sizes were taken from a single report if more than one relevant study was reported, or data from more than one pair of variables were presented. If studies reported multiple measures of similar constructs, effect sizes were averaged to contribute only one effect per relationship. Seventy-three studies were selected for final inclusion in the meta-analysis (see References for included studies). These studies yielded 164 effect sizes.

Table 1 presents the results for each of the 21 meta-analyses including the overall mean sample weighted effect size *(d+)*, the 95% confidence interval (CI), the homogeneity statistic (*Q*), the number of studies, and the number of participants. Most results showed a statistically significant and positive effect size. A result is statistically significant when the confidence interval does not contain zero.

In addition to significance and strength of the relationship, Table 1 also suggests heterogeneity within analyzed groups. The homogeneity statistic (*Q*), if significant, indicates that there is substantial heterogeneity among effect size estimates. Two analyses had only a single study; in these cases no conclusions can be made concerning heterogeneity of study results. Three of the 21 relationships that were analyzed were not found to be significantly heterogeneous.

Path Model

The final three steps in the Viswesvaran and Ones' (1995) methodology involve specifying and testing the measurement model (if any) and the path model. In this case, only a path model is proposed.

Table 1

Results of 21 Meta-Analyses of Hypothesized (H) and Nonhypothesized Relationships

Meta-analysis variables	Number of effect of sizes	Number of participants	d+	95% confidence interval (CI)	Test for homogeneity within class (Q_W)	
Relationship-Expected cooperation (H1)	1	72	0.28	−0.17/0.75	–	–
Relationship-Cooperation	3	462	0.13	−0.05/0.32	6.50	*
Relationship-Goals	1	106	−0.39	−0.81/0.02	–	–
Relationship-Profit	13	1188	0.24	0.14/0.35	34.32	**
Relationship-Perception of other	2	264	0.35	0.17/0.53	0.06	
Relationship-Satisfaction	2	358	0.05	−0.10/0.20	15.80	**
Goal-Profit (H2)	20	2247	0.38	0.31/0.44	73.23	**
Goal-Expected Cooperation (H3)	6	446	−0.07	−0.21/0.07	4.33	
Goal-Cooperative behavior	3	187	0.48	0.25/0.70	8.49	*
Goal-Perception of other	2	154	0.20	0.08/0.47	5.73	*
Goal-Satisfaction	2	140	0.60	0.31/0.90	0.00	
Expected cooperation-Cooperation (H4)	12	985	0.23	0.14/0.33	39.55	**
Expected Cooperation-Profit	16	1439	0.10	0.02/0.17	105.67	**
Expected Cooperation-Perception of other	6	394	0.79	0.62/0.96	29.73	**
Expected Cooperation-Satisfaction	3	806	0.54	0.44/0.64	44.41	**
Cooperation-Profit (H5)	32	2175	0.58	0.51/0.65	344.67	**
Cooperation-Perception of other	8	459	0.52	0.38/0.67	23.56	**
Cooperation-Satisfaction (H7)	3	504	−0.04	−0.16/0.09	13.04	**
Profit-Perception of other (H8)	12	1064	0.52	0.43/0.61	64.73	**
Profit-Satisfaction (H9)	10	1487	0.87	0.79/0.95	205.71	**
Perception of other-Satisfaction (H10)	7	1047	1.21	1.11/1.30	16.36	*

Notes: Positive *d+* indicate estimated effect sizes in the hypothesized direction. Q_W is a test of within-class variation; significance indicates a rejection of homogeneity within class.
*p < .05; **p < .01

The meta-analyses produced overall effect sizes adjusted for sample size (*d+*) as shown in Table 1. Path analysis, however, requires the uncorrected correlation coefficient. The correlations entered in the causal model were uncorrected for sample sizes (see Table 2). The effect sizes were not corrected for the number of participants in the study, because the sample size was adjusted within the path model. The uncorrected correlations produced by the 21 meta-analyses, shown in Table 2, were used to test the path model. All structural equation modeling was conducted using LISREL 8.72 (Joreskog & Sorbom, 2001).

Conducting a path analysis requires specification of a sample size for the analysis. Of the eight organizational psychology applications of this method cited earlier, four did not contain information about the sample size used in the path analysis. One used the mean, but did not state whether that was the mean number of subjects per cell, mean number of subjects per study, or mean number of studies per cell. One gave a value for

Table 2

Correlations of Variables Derived from Meta-Analyses

	1	2	3	4	5	6	7
Goal	–						
Relationship	−.20*	–					
Expected cooperation	−.04	.14	–				
Cooperative behavior	.23**	.07	.12**	–			
Profit	.19**	.12**	.05*	.28**	–		
Perception of other	.10	.17**	.37**	.26**	.25**	–	
Satisfaction	.29**	.03	.26**	−.02	.40**	.52**	–

Note: Correlations are uncorrected for sample size bias, sample sizes vary across matrix.

**p < .01.

N, but did not specify how that number was arrived at. One more used the smallest cell N as a conservative estimate. The most specific information was given by Premack and Hunter (1988), who state that they averaged sample sizes across individual studies, although they did not specify the type of averaging used. We then looked to Johnson, Carter, Davison, and Oliver (2001), who conducted a synthetic validity study combining data from multiple samples, and developed a rationale for the use of the harmonic mean in such situations. They state that "the harmonic mean is more appropriate than the arithmetic mean because synthetically derived correlations are based on means of individual correlations. The variance of means is proportional to 1/N, not N, and the harmonic mean takes this relationship into account. The harmonic mean is often used in situations in which two or more unequal samples are involved and a single value of N is required" (p. 775). This allows the path model to be tested with a single sample size, rather than the multiple-N situation which so often results in a non-positive-definite covariance matrix.

Hypothesized Model

The proposed path model includes seven variables which implies a matrix with 21 non-redundant correlations. These seven variables produced 21 unique meta-analytically derived correlations, and the number of subjects associated with those 21 statistics ranged from 72 to 2,247, with a harmonic mean of 312 (harmonic mean = $[k/\Sigma(1/n_i)]$; k = number of correlations; n_i = nonredundant n for all studies used in calculating the ith correlation).

The hypothesized model (Figure 1) showed a moderate but not substantial fit with the data. Major fit indices are shown in Table 3. In particular, one of the hypothesized paths did not have significant path coefficients (Hypothesis 3). That is, Goal did not have a direct effect on Expected Cooperation. In addition, there seemed to be a rationale for adding three pathways that had not been in the original model. A link from Goal to Cooperation was added, as were links from Goal to Satisfaction and from Expected Cooperation to Perception of Other. The model was run again with these changes (one path deleted, three paths added), and the fit of the model improved (see

Table 3
Fit Indices for Tested Models

	χ^2	df	GFI	AGFI	RMR	RMSEA
Hypothesized model	104.09	8	.91	.76	.11	.17
Final model	22.51	8	.98	.93	.05	.08

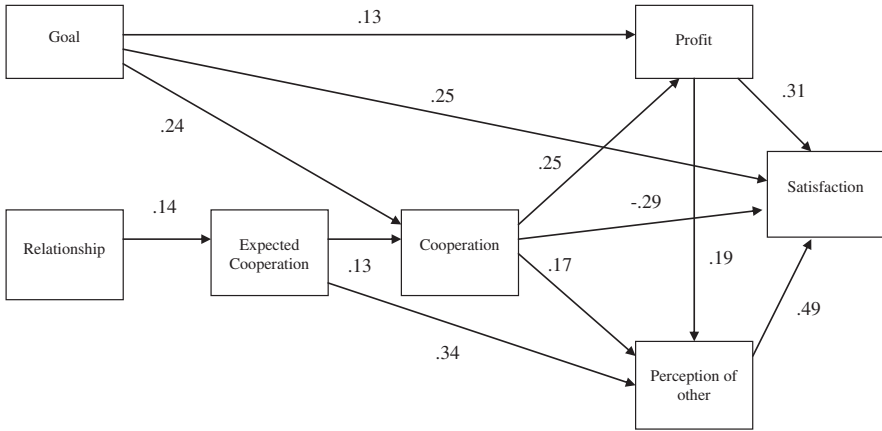GFI, goodness of fit; RMR, root mean-square residual; RMSEA, root mean-square error of approximation.

Figure 2. Final model. All path coeffiients signifiant at $p < .05$.

Table 3, Figure 2). While still significant, the chi-square is much lower. The Goodness-of-Fit (GFI) index is now at .98, meaning that 98% of the variance and covariance information from the observed data is reproduced by the model-implied covariance matrix (Schumacker & Lomax, 2004). Acceptable values for the Root Mean-Square Residual (RMR) are typically user-defined, and the residuals here are quite low. While authorities differ on what constitutes a good value for the Root Mean-Square Error of Approximation (RMSEA) (Bollen, 1989; Hu & Bentler, 1999), Browne and Cudek (1993) feel that .05 to .08 is a reasonable range. Thus, the revised model appears to be an adequate fit to the data.

Discussion

The revised model is consistent with the hypotheses. First, a direct link connects Goals to Profit. This is consistent with the research on Goal-Setting Theory, both in general and within the negotiation context. A direct link exists from Goals to the level of Cooperation in the negotiation process; the presence of goals leads to a more cooperative process. Negotiators who had a prior relationship with their opponents (or who anticipated one in the future), however, expected more cooperative processes than those for whom the negotiation task was a once-only encounter with the other party.

Counter to our predictions, the presence of a goal drives participants' expectations of cooperation, in turn resulting in a more cooperative process. The goal-cooperation link was not mediated by expectations. Thus, when goals were present, they led directly to cooperative behavior.

Zetik and Stuhlmacher (2002) discuss how goals may operate differently in interdependent tasks (like negotiation) than in tasks more traditionally used in the goal-setting literature (like brain-storming or proof-reading). Recall that our sample of studies drew on negotiations with integrative potential, thus trade-offs and information exchange were critical for maximizing profits. Perhaps, while many negotiators are individualistically focused on their own profits, negotiators with high goals in integrative contexts are forced to be concerned with successful outcomes for both parties. Our results encourage further investigation into how goals work in interdependent tasks like negotiation. In particular, it seems other moderating or mediating links are involved. One possibility may be the negotiator's self-efficacy. If one is truly committed to a difficult goal, and has high self-efficacy that the goal can be reached, that negotiator is going to be expecting that the opponent will cooperate. If negotiators are unfamiliar with the task or can not draw on past successes, they may have low self-efficacy for achieving the goal. Otherwise, negotiators would not feel confident that their goals can be attained. If self-efficacy is low, this would weaken the link between goals and expectations of cooperation. Additional variables may be essential in understanding the relationship between goals, expectations of cooperation, and actual cooperation.

Results also found negotiator satisfaction directly affected by profit. In the final model, perceptions of the other party had a direct path to negotiator satisfaction. A behaviorist approach suffices to explain this latter outcome: rewards lead to satisfaction. In the context of this model, these rewards appear to be threefold, namely objective profit, the reward of cooperating with another, and working with opponents who are admired in some way.

As predicted, cooperative behaviors led directly to profits. Negotiators who cooperated had better objective outcomes than did those who were more adversarial. Since all the studies in the meta-analysis had used negotiation tasks with integrative potential, it can be surmised that cooperative negotiators may have reached more integrative solutions, thus maximizing both individual and joint outcomes.

Cooperative behaviors also had a direct effect on negotiator satisfaction and perceptions of the opponent. Cooperative behavior, profit, and perceptions of the other party form a linked relationship. There is a direct link from process to perceptions, such that individuals have more positive perceptions of their negotiating partner when the process is more cooperative. Prior research had found that cooperative behavior leads to higher profit, which in turn also improves perceptions of the negotiating partner; these relationships held up when included as part of a larger model.

However, contrary to prediction, cooperative behavior also led to lower satisfaction on the part of the negotiator. A possible explanation for this stems from the fact that cooperation often comes less naturally than competition and takes more time and more effort (Bazerman & Neale, 1983; Thompson & Hastie, 1990). That additional time and

effort expended could have led negotiators to be less pleased than if they had been able to take the easy (i.e., competitive) way out. It should also be noted that the path in question is part of a much more complex structure of variables, including profit and positive perceptions of others. Cooperation may only lead to lower satisfaction when these other variables are held constant. A second potential explanation for this finding is the difficulty in pinpointing the motivations behind the behavior. A variety of cooperation measures were combined and this may overlook differences in yielding vs. problem-solving approaches to cooperation.

Finally, there is a linked relationship between perceptions of other, profit, and satisfaction. As predicted, individuals who experience better profits report greater satisfaction with the negotiation. Profit also is a factor in determining perceptions of the negotiating partners (as discussed above), which in turn affects satisfaction.

Strengths and Limitations

A model of the negotiation process was proposed and tested, and support has been found for this model. The final model presented here, we feel, adequately fits the data. However, we must caution the reader that by no means does this imply that any model presented herein is the only possible model, or even the best of all possible models. Structural Equation Modeling is a descriptive statistical process, not an inferential one. For example, it is important to acknowledge that our model may have omitted other important variables that may be influential within a negotiation. Given that no individual research effort is able to include all potentially influential variables, other models with other sets of variables may also serve to describe the sequence of steps leading to negotiation outcomes. This is a limitation, not only of this study, but of all model-testing procedures.

Our analysis also relied on the published literature in the field. While this is generally the base that scholarship builds on, we are mindful of the possibility of publication bias influencing the results. The extent that unpublished research would change the findings is minimized here because the variables of interests were often not the main focus of the article. The effects often came from tables of means or correlations that were provided as routine descriptive statistics; these results would not likely influence the decision to publish the study. However, to screen for potential publication bias, we followed Berg's (1994) advice and ran funnel plots that compared sample size by effect size. These plots try to determine if findings from large sample sizes (that are generally more publishable and provide less extreme results) differ systematically from the findings in smaller sample sizes (which may have less stable results than larger samples). In examining the larger meta-analyses in our analysis, no pattern emerged suggesting that study level effect sizes varied with sample size.

A positive feature of the results is that findings are based on a variety of data sources. The studies come from a range of researchers and research traditions. The results are less susceptible to method bias than relying on a single report. Additionally, the model testing included data from objective profit, observed behaviors, as well as self-ratings.

Future Research

The model suggests several areas for further research. First, our study explicitly shows areas that need additional exploration. The limited number of interrelationships reported ($k = 1$–32) suggests more primary studies are needed. Two of the correlations in the matrix used in the path model were obtained from only a single study. In particular, there is a paucity of studies studying relationships within the context of negotiation. Given the importance of social interaction in dyadic situations, this highlights an area where more work could benefit the field. With more studies it would be possible to define relationship beyond a dichotomy which the current sample of studies did not allow. The meta-analyses found the most studies for (a) the relationship between cooperative behavior and profit ($k = 32$), and (b) the relationship between goals and profit ($k = 20$). Most of the studies reported individual rather than joint profit, and data on both outcomes together would be quite interesting in understanding the interrelationships.

Also neglected in current research are variables relating to the "subjective" negotiation or the perceptions that seem to play a role in the negotiation exchange. Despite the limited number of studies on subjective variables, the results suggest that negotiators should pay attention to their expectations about the negotiation, as well as considering the expectations of the other party. Our model provides evidence that these initial impressions are linked to important outcomes.

Additionally, looking at single issue or one-shot negotiations are areas for future modeling. In particular, it is possible that early stages in a negotiation (goals, information, first offers) may have a stronger influence on outcomes in single issue negotiations than in negotiations with integrative potential where value may emerge through cooperation and strategy. It is important to consider the potential for nonlinear relationships that the model could not test. For example, very difficult goals are associated with low-objective outcomes just as no goals are. This would be a nonlinear relationship. Or, in terms of goals and satisfaction, negotiators who succeed when putting modest effort into the negotiation may be more satisfied than those who do well too "easily" or those who have to work exceptionally hard for the outcome.

Another issue is that we chose to create a model that is relevant for negotiations in which integrative solutions are both desirable and possible. However, the reality is that most negotiations use distributive strategies and result in distributive (e.g., win-lose, compromise) solutions. The dynamics of these types of negotiations could also profitably be investigated.

Finally, despite the popular notion that negotiators must be competitive to succeed, our results provide further evidence that, in multi-issue negotiations, cooperative behaviors may have many more positive outcomes than competitive behaviors. Since most studies considered cooperation and competition as two ends of a continuum rather than separate constructs, this conclusion is speculative, however.

In conclusion, we hypothesized and found confirmation that among the major factors that drive a successful negotiation are goals and a good relationship. This model is an attempt to delineate and explain this sequence of events, using a methodological

approach not common in this area. The combination of primary empirical studies into one overall model advances our understanding of the negotiation process. To be specific, negotiators make more profit, have more positive perceptions, and are more satisfied when expectations of cooperation and clear outcome goals exist. Positive relationships drove the expectations of cooperation. The two factors of goals and relationships drive cooperative behavior and create successful outcomes. Other factors are psychological, such as the negotiator's perception of his or her opponent in the negotiation situation. It seems clear that any understanding of how people negotiate must include both sets psychological and structural factors. In terms of practical advice, the results strongly suggest that to succeed, that is, to profit *and* to be satisfied, negotiators should strive to have goals and to work toward a cooperative negotiation process.

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