

Bargainer Characteristics in Distributive and Integrative Negotiation

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Negotiation researchers theorize that individual differences are determinants of bargaining processes and outcomes but have yet to establish empirically the role of individual differences. In 2 studies the authors used bargaining simulations to examine the roles of personality and cognitive ability in distributive (Study 1) and integrative (Study 2) negotiation. The authors hypothesized and found evidence that Extraversion and Agreeableness are liabilities in distributive bargaining encounters. For both Extraversion and Agreeableness there were interactions between personality and negotiator aspirations such that personality effects were more pronounced in the absence of high aspirations. Contrary to predictions, Conscientiousness was generally unrelated to bargaining success. Cognitive ability played no role in distributive bargaining but was markedly related to the attainment of joint outcomes in a situation with integrative potential.

Over the course of decades of bargaining research, it has been widely assumed that the personal characteristics of individual bargainers are relevant to an understanding of the processes and outcomes of negotiation encounters. Unfortunately, empirical support for the role of individual differences in bargaining is inconclusive (Neale & Northcraft, 1991; Pruitt & Carnevale, 1993), leading some researchers to question whether such differences are important determinants of negotiation behavior (e.g., Lewicki, Litterer, Minton, & Saunders, 1994).

In this article we report the results of two studies designed to overcome some of the limitations that have plagued previous research on individual differences in negotiation. Rather than focus on individual, isolated traits, as has been the case in past research, we drew upon a comprehensive model of personality structure and considered the role of cognitive ability. We tested direct as well as interactive hypotheses addressing the role of bargainer characteristics, and we considered their effects at different stages of the negotiation episode. We considered both purely distributive bargaining situations and situations with in-

tegrative potential. Although the negotiators in our studies were students, they were graduate management students with an average of 3–4 years of significant work experience beyond their undergraduate schooling.

Research on Individual Differences in Bargaining

A large number of studies conducted during the 1960s and 1970s used game-theoretic methods to investigate the influence of a wide variety of personality traits on bargaining (for reviews, see Hamner, 1980; Hermann & Kogan, 1977; Rubin & Brown, 1975; Terhune, 1970). Since the 1970s, investigations of personality and bargaining moved beyond game-theoretic outcomes to consider process variables and integrative agreements (for reviews, see Neale & Northcraft, 1991, and Thompson, 1990).

The overall legacy of research on personality and bargaining is one of inconsistency and confusion (Pruitt & Carnevale, 1993). Few findings have proven replicable, and contradictory results are not uncommon. For example, as summarized in Rubin and Brown's (1975) review, 7 of 16 experiments during the 1960s and early 1970s on the link between authoritarianism and bargaining (mostly using prisoner's dilemma [PD] games) found no relationship, whereas the other 9 experiments did find a link, with low-authoritarian bargainers more inclined toward cooperative behavior than high-authoritarian bargainers. Another example is found in studies of Machiavellianism. Early PD studies suggested that people high in Machiavellianism (high Machs) behave more competitively and strategically than people low in Machiavellianism (low Machs; Rubin & Brown, 1975) but, in terms of negotiated outcomes, Fry (1985) found that high Machs outperform low Machs, whereas Greenhalgh and Neslin (1983) reported the opposite finding. Similar contradictions in research findings exist for a number of personality traits and measures.

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Despite inconsistent findings, there is reason to assume that individual differences are important in understanding how individuals manage conflict. Sternberg and his colleagues have demonstrated that marked consistencies in styles of conflict resolution exist within individuals across both hypothetical conflict situations (Sternberg & Soriano, 1984) and actual conflict situations (Sternberg & Dobson, 1987), and these studies were able to explain some of these consistencies dispositionally. Addressing the equivocal research tradition on dispositional effects, critics (Terhune, 1970; Thompson, 1990) have pointed to variations in experimental simulations and methods across studies, insufficiently rich and complex bargaining simulations, trait measurement issues, and an underemphasis on the role of situations. Indeed, research on individual differences in bargaining has not kept up with the general shift in dispositional research toward the study of person-situation interactions (see Pervin, 1990).

In the studies we report in this article we moved beyond isolated traits to consider the broad factor structure of personality captured in the five-factor model. In addition to disposition, we investigated the independent role of cognitive ability. We examined these individual differences in the context of both distributive (win-lose) and integrative (where the potential for win-win exists) negotiation.

The Five-Factor Model of Personality and Its Relevance in Negotiation

Evidence regarding the role of personality in social interaction has been slow to accumulate, in part because of a lack of consensus regarding how personality should be defined and measured (Driskell, Hogan, & Salas, 1987). In recent years the five-factor approach has received significant research attention (see Digman, 1990), and it is the basis for our analysis of personality in negotiation.

The personality factors (frequently referred to as the Big Five) that make up the five-factor approach are not themselves traits but rather dispositional categories under which a variety of specific traits may be subsumed. Opinions differ as to appropriate labels for the five factors. We use the labels favored by Barrick and Mount (1991, pp. 3-5), among others, who described the Big Five as including (1) Extraversion, which is associated with being sociable, assertive, talkative, and active; (2) Agreeableness, which is associated with being courteous, flexible, trusting, cooperative, and tolerant; (3) Conscientiousness, which is associated with being careful, responsible, and organized; (4) Emotional Stability, which is associated (conversely) with being anxious, depressed, worried, and insecure; and (5) Openness to Experience, which is associated with being imaginative, curious, original, and broad-minded. The five-factor model thus captures individual characteristics that are affective, experiential, and motivational, as well as interpersonal (McCrae & Costa, 1989).

Proponents of the five-factor approach cite the volume of studies that have empirically reproduced a five-factor structure (see Goldberg, 1993, for a review), although debate over its validity is ongoing. In organizational behavior, the five-factor approach has yielded some consistent effects in the prediction of job performance. Conscientiousness has been linked to per-

formance across a range of job types, and Extraversion has predicted performance in job settings where social interaction is a critical job feature (Barrick & Mount, 1991). Big Five dimensions have also been associated with the processes and outcomes of work group interaction (Barry & Stewart, 1997; Thoms, Moore, & Scott, 1996). In sum, the five-factor model has been applied to the study of social interaction involving task objectives in various situations but has not previously been adapted to the study of negotiation processes.

In terms of the five-factor model, we propose that Extraversion, Agreeableness, and Conscientiousness capture the facets of personality that will influence bargaining processes and outcomes. However, different effects are anticipated depending on whether a particular negotiation episode is purely distributive versus one that has integrative potential. We discuss each type of bargaining encounter separately.

Personality Effects in Distributive Bargaining

Distributive bargaining situations are those in which the issues at stake involve fixed sums of goods or resources to be allocated among the negotiating parties. In the purely distributive case, the interests of the parties are negatively correlated, with an increase in the utility of one party's outcome associated with a correspondent decrease in the utility of the other party's outcome (e.g., Walton & McKersie, 1965). A classic example is a haggle over the purchase price of a single item, such as a used car, where the seller seeks the highest price possible and the buyer hopes to pay as little as possible. In this type of situation, each negotiator presumably has in mind a reservation price (also known as a *resistance point* or a *bottom line*) beyond which he or she will not go in reaching an agreement (Raiffa, 1982). To the extent that a spread exists between the two parties' reservation prices, a "bargaining range" of potential agreements exists (Lewicki et al., 1994).

Effects of Extraversion and Agreeableness

We analyzed the influence of personality in distributive negotiation by first focusing our attention on two Big Five factors that are manifestly related to social interaction and social behavior: Extraversion and Agreeableness. McCrae and Costa (1989) demonstrated empirically that Extraversion and Agreeableness correspond most clearly with Wiggins's (1979) circumplex of dispositions related to interpersonal interaction; they concluded that "the interpersonal circumplex occupies the two-dimensional plane defined by Extraversion and Agreeableness" (p. 590).

Extraversion, as an indicator of one's interpersonal assertiveness, gregariousness, and confidence (Costa & McCrae, 1992), has been found to predict levels of individual impact in group interaction (Barry & Stewart, 1997). Agreeableness encompasses tendencies to be cooperative, considerate, generous, and trusting of others (Barrick & Mount, 1991; McCrae & John, 1992). Graziano, Jensen-Campbell, and Hair (1996) argued that Agreeableness may be the Big Five dimension most closely tied to interpersonal relationships and found that individual differences in Agreeableness are linked to perceptions of and preferences for conflict resolution behaviors. In situations

involving interdependence, Agreeableness may reflect a stable "social value orientation" (Messick & McClintock, 1968) that is prosocial rather than focused narrowly on individual self-interest. In the specific context of negotiation, De Dreu and Van Lange (1995) found that bargainers who had a prosocial orientation made fewer demands and more concessions than bargainers whose social value orientations were either individualistic or competitive.

We hypothesized that Extraversion and Agreeableness would be liabilities for negotiators facing a distributive bargaining situation. The extravert's gregariousness is potentially an asset in situations where information sharing contributes to positive outcomes. In the purely distributive case, however, strategy is more important than cooperation, and negotiator interests are better served by the acquisition of information from one's opponent than by sharing information about one's own underlying interests. An analogous line of thought applies to Agreeableness: A proclivity to be trusting and cooperative might be constructive when mutual gain is a priority, but in distributive bargaining it has the clear potential to undermine the necessary pursuit of self-interest. These predicted effects may be understood through the sequence of offers and counteroffers within a distributive negotiation episode (e.g., Harnett & Cummings, 1980) and in relation to bargainers' goals and aspirations.

Extremeness of the first offer. In any negotiation, the decision to put the first offer on the table is a double-edged sword. To the offerer's potential disadvantage, an initial offer conveys information about aspirations and utilities (Rubin & Brown, 1975). Depending on the underlying structure of reservation prices, this information may cut off part of the range of potential agreements to the disadvantage of the offerer. On the other hand, an opening offer may lead the opponent to perceive that settlements will favor the party making the first offer. This is more likely to happen when the first offer is an extreme one (Siegel & Fouraker, 1960). For example, a seller who initially demands a high price may induce the buyer to believe that the range of potential agreements is closer to the seller's reservation price than originally thought. Moreover, extreme initial offers can signal that the party making the offer is a hard bargainer who will not be induced to retreat (Lewicki et al., 1994); when this occurs, the recipient of such an offer may moderate his or her negotiating objectives and be more inclined to offer concessions (Hammer & Yukl, 1977). Thus, although it is not always clear who should make the first move, bargainers who do make a first move may be better off starting with a relatively extreme offer (Pruitt, 1981). There are, however, limits to the effectiveness of extreme offers (e.g., offers so extreme that they discredit the bargainer who made the offer or reduce hope on the other side to the point of withdrawal).

With respect to personality, traits that would incline a negotiator to pursue a tough or demanding strategy may be determinants of the extremeness of that negotiator's opening offer. Among the Big Five, Agreeableness is most apparently relevant, inversely: A disinclination to be cooperative increases the odds that a bargainer will elect to stake out an extreme position. Thus, we expected low-Agreeableness bargainers to make opening offers of higher economic value for themselves than would high-Agreeableness bargainers. We made no predictions at this stage about Extraversion. Although Extraversion might predict mak-

ing a first move, it has no inherent connection to bargaining toughness.

Response to the first offer. In negotiation, a first offer can serve as an anchor that biases the other party's judgments of the underlying economic structure of the bargaining encounter (e.g., Neale & Bazerman, 1991). Anchoring can be examined in a single-issue distributive bargaining context by looking at the extremeness of a counteroffer, that is, the economic distance between one party's initial offer and the other party's initial counteroffer. Other things being equal, a counteroffer will be closer to the value of the initial offer if the party making the counteroffer has been anchored by the initial offer than if not.

Personality may help to determine the likelihood that a negotiator will fall prey to the anchoring heuristic. We explain this connection in two ways. First, we expect that anchoring is more likely to occur when bargainers are highly concerned with the development and maintenance of social ties. The greater one's dispositional orientation toward being social, the more one engages with the other party and focuses on the interaction (including the other party's initial offer) rather than just on one's own plans. As a result, a bargainer's susceptibility to anchoring may increase when he or she cares about the relationship with the other party. Second, we expect that anchoring is less likely to occur if a bargainer is focused on self-interest alone. This helps ensure that the bargainer focuses completely on his or her own goals rather than on the needs and desires expressed by the other side (in the form of a first offer). Anchoring should thus be less of a trap for people with a competitive orientation rather than an interdependent one (Deutsch, 1973). In sum, traits associated with a competitive orientation would be expected to mitigate against anchoring, whereas those associated with sociability would be expected to enhance the effects of anchoring. We therefore predicted that anchoring would be more likely to occur when negotiators who received extreme first offers were high in Extraversion and high in Agreeableness.

Payoff in the final settlement. Research on distributive bargaining indicates that these first moves—initial offer and counteroffer—account for a significant portion of the variance in final outcomes in distributive negotiations (Pruitt & Carnevale, 1993). Thus, the effects discussed above for Agreeableness and Extraversion should influence the final settlement: Bargainers who are higher in Extraversion and Agreeableness should do worse than those lower in Extraversion and Agreeableness. Of course, negotiations do not end after the initial offer and counteroffer. There are further moves and countermoves, and further chances to anchor opponents and signal determination or resolve. We expect that throughout this process of concession making, the same patterns will hold for Agreeableness and Extraversion: Being tougher and less revealing forces the other to concede more; being more social and interpersonally oriented enhances the likelihood of being influenced by the opponent's strategic moves. In this respect, Extraversion and Agreeableness should continue to be a disadvantage throughout distributive bargaining. We recognize, however, that there are many more aspects to bargaining that determine the final deal, such as use of commitment tactics (Schelling, 1980) to force a favorable settlement, or the use of threats and bluffs to convince the other side of the correctness of one's analysis (e.g., Shapiro & Bies,

1994). Extraverts may be more likely to engage in these negotiation behaviors.

Effects of Conscientiousness

Negotiation is more than simply a context for social interaction; the negotiation encounter creates the conditions for effortful analysis and complex problem solving. We therefore also considered the influence of Conscientiousness. It is widely assumed that preparation and analysis in advance of a negotiation encounter improves one's chances for success (e.g., Lewicki et al., 1994; Murnighan, 1992). If a negotiator plans his or her first moves, for example, he or she will be less likely to be influenced by the other party's first offer. Planfulness provides an antidote to many of the tactics commonly used in distributive bargaining. Conscientious individuals tend to be organized, planful, task focused, and achievement oriented (McCrae & John, 1992) and are thought to be more oriented toward task accomplishment than toward socioemotional involvement (Aronoff & Wilson, 1985). Thus, we propose that, other things being equal, highly conscientious bargainers will experience more success—that is, more favorable negotiated settlements—than less conscientious bargainers.

Moderating Role of Aspirations

A recurring theme in literature reviews on personality and bargaining is the need to move beyond main effects and address the conditions under which personality effects are more or less apparent (e.g., Thompson, 1990). We focused on one particular such condition: the aspiration level of the bargainer whose personality is at issue. *Aspiration level* refers to the value of the goal toward which a bargainer is striving (Pruitt, 1981). With notable consistency, researchers have found that higher aspirations are associated with higher individual payoffs in negotiation (see Hamner, 1980, and Pruitt, 1981, for reviews). Beyond payoffs, aspirations as a moderating or control variable have been found to influence process issues, such as the relationship between offers and counteroffers (Yukl, 1974), and the relationship between sex role attitudes and bargaining outcomes (Williams & Lewis, 1976).

Aspirations may also affect the strength of the personality effects we predicted above. Aspirations may be regarded as a proxy for motivational influences on a negotiator's determination to succeed at a bargaining task. Drawing from the work on the effects of situational strength and personality, we know that the influence of stable dispositions is more likely to be felt when situational constraints are weak rather than strong (e.g., Kenrick & Funder, 1991). Motivation to succeed is not strictly situational, because it is partly carried within the individual. However, a strong desire to win may motivate a bargainer to act in ways that are otherwise inconsistent with his or her personality. In contrast, if there does not exist such a strong motivation, bargaining behaviors are more likely to be affected by stable aspects of personality. Thus, we expected the influence of personality on bargaining processes and outcomes to be attenuated by high aspirations.

Personality Effects in Integrative Bargaining

Integrative bargaining situations are non-zero-sum encounters in which there is the possibility for joint gain from the negotia-

tion. In the purely integrative case, there is no conflict between the two parties, if they can find appropriate solutions. Few negotiations are purely integrative; most have both integrative and distributive aspects (Walton & McKersie, 1965) and are described as *mixed motive*. To the extent that negotiators want to extract from a negotiation whatever joint gains are possible, different tactics are required than for distributive bargaining (Lax & Sebenius, 1986).

Integrative bargaining benefits from more, rather than less, communication. The likelihood that parties will discover solutions that meet one party's needs at little cost to the other party is enhanced when the parties convey their true needs and concerns—their underlying interests (Fisher, Ury, & Patton, 1991)—and if they remain engaged with each other, exchanging information and exploring options. Thus, being aggressive and self-focused is not productive; neither is it advantageous to be focused only on the other side's needs. Effective integrative bargaining requires concern for one's own as well as the other side's interests (Pruitt & Rubin, 1986) as well as persistence and effort. It takes more work to understand each party's interests, create solutions, and reach agreement than it does to simply trade concessions.

In terms of personality traits, we expected that Extraversion would be positively associated with realizing more integrative potential, because revealing information about interests and sustained exploration of ideas facilitates integrative bargaining. Similarly, high-Agreeable bargainers are more likely to consider the needs of the other side and less likely to engage in contentious tactics, such as extreme demands and personal attacks, that can interfere with integrative bargaining. However, a strong desire for cooperation and distaste for conflict may make it harder to present one's own needs with clarity and conviction. If individuals with a cooperative social value orientation are less likely to make demands and more likely to grant concessions (De Dreu & Van Lange, 1995), then the costs of Agreeableness may counteract the benefits of Agreeableness, resulting in no effects.

The one personality factor that we believe has the same effect for both integrative and distributive bargaining is Conscientiousness. Just as it helps to engage in careful analysis and strategic planning for distributive bargaining, it helps to think through one's approach to integrative bargaining. Most important, doing well with integrative bargaining requires that negotiators work to understand their own interests and sustain momentum through the process of gathering information and creating solutions. Conscientiousness, then, should be positively associated with joint gains in situations with integrative potential.

Cognitive Ability and Its Relationship to Negotiation

General cognitive ability (or *intelligence*, or *g*) refers to a stable tendency for individuals to be able to successfully perform information-processing tasks. Decades of research have lent support for cognitive ability as a construct that is stable and reliable (e.g., Gustafson, 1984; O'Reilly & Chatman, 1994), and empirical studies suggest that cognitive ability predicts job performance and career success across job types and occupations (Hunter, 1986). One way that cognitive ability benefits job performance is through information acquisition: Workers

with higher levels of cognitive ability are better at acquiring relevant knowledge that facilitates problem solving (Schmidt, Hunter, Outerbridge, & Goff, 1988).

It therefore seems reasonable to assume that cognitive ability has potential relevance as a predictor of negotiation behavior. Negotiation is, fundamentally, an information-processing task that combines information acquisition and analysis with decision making. Yet we know very little about the role of cognitive ability in bargaining. Compared with studies of personality, there has been a paucity of published work on cognitive ability in research on the psychology of negotiation. Given the significance of cognitive ability as a reliable predictor of performance on information-processing tasks, an understanding of bargainer characteristics is incomplete without attention to the role of cognitive ability.

We hypothesized that cognitive ability helps individuals do well in negotiations, just as it appears to do in other tasks involving complex information processing. Our reasoning here extends the argument we presented for Conscientiousness. The more negotiators are careful to plan ahead, think about the likely strategy of an opponent, analyze alternatives, and contemplate opening moves, the more likely they are to do well in distributive bargaining. Success at these tasks is enhanced by a basic ability to understand and process information. Conscientiousness may be associated with the likelihood that a bargainer will expend effort to initiate and persist in these analyses, but high cognitive ability may predict the level of accuracy and sophistication with which analyses are performed.

There is even greater potential for cognitive ability to help bargainers when they face integrative bargaining situations. Integrative bargaining requires not only planning but also the ability to acquire and interpret complex information about the other party's interests. Integrative situations also present ongoing opportunities to identify or invent creative ways to meet those interests. Integrative bargaining is thus substantially more cognitively complex than the offer-counteroffer process that is characteristic of distributive bargaining. Pruitt and Lewis (1975) demonstrated that, under certain conditions, bargainers high in cognitive complexity (the ability to integrate disparate information) are more likely to realize integrative outcomes through communication than bargainers low in cognitive complexity. We hypothesized that cognitive ability would be associated with better outcomes in all negotiations, but especially in situations with integrative potential.

Study 1: The Distributive Case

In Study 1 we examined the roles of personality and cognitive ability in a purely distributive bargaining task. Using an unstructured role-play simulation of a single-issue business negotiation, we examined how offers, counteroffers, and settlements were influenced by the personal characteristics of research participants who acted as negotiators.

Method

Participants

Three-hundred seventy-eight graduate students enrolled in a graduate management course participated for course credit. They were randomly

formed into 189 pairs for a distributive negotiation simulation. Five pairs were excluded because they provided unusable data, leaving 368 participants formed into 184 negotiating dyads. Eighty-two participants (22.3%) were female, and eighty-three (22.7%) were citizens of countries other than the United States. The average age of participants was 26.0 years ($SD = 3.1$).

Procedure

We randomly assigned 1 member of each dyad to the buyer or seller role in a single-issue negotiating task. The issue at stake was the unit purchase price of an industrial commodity. Printed role instructions informed the seller (a manufacturer) that he or she had excess production capacity, making it possible to sell a fixed number of units, on a one-time basis, to another manufacturer who was facing a production shortfall. Participants in the seller role were told that they should sell the product for no less than \$10 per unit (seller's reservation price). Participants in the buyer role were told to buy the product if they could get it for \$35 per unit or less (buyer's reservation price). Thus, the structure of the task provided parties with a substantial zone of potential agreement (the distance between reservation prices).

Participants were instructed to conduct the negotiation in a way that maximized the economic interests of the party they represented as described in the role instructions. Participants were also aware that a small grading component in the course would be tied to their ability to realize those interests through negotiation. Four pairs were unable to reach a settlement and were excluded from settlement-related analyses. Individual members of each dyad completed a brief questionnaire on the process and outcome of the negotiation.

Measures

Personality. Several weeks before undertaking the bargaining task, participants completed Goldberg's (1992) unipolar Big Five instrument. Respondents assessed the accuracy of each of 100 adjectives as a self-descriptor on a 9-point response scale with endpoints of *extremely inaccurate* and *extremely accurate*. Within the instrument, 20 items are intended to represent each of the five dimensions that compose the five-factor model. Levels of coefficient alpha assessing internal consistency reliability were .93 for Extraversion, .87 for Agreeableness, .86 for Conscientiousness, .86 for Emotional Stability, and .86 for Openness to Experience.

Cognitive ability. We used participant scores on the Graduate Management Admissions Test (GMAT) as a measure of general cognitive ability. The scoring of the GMAT ranges from 200 to 800, with a mean of approximately 500. Like many aptitude tests that are thought to measure general intelligence, the GMAT combines tests of specific verbal and mathematical abilities. Although not labeled as an intelligence test, the GMAT has been used in published research as a measure of general cognitive ability (O'Reilly & Chatman, 1994). We were able to obtain GMAT scores for 332 of the 368 participants.

Offers and counteroffers. In the posttask questionnaire, each participant indicated (a) who made the first offer (seller, buyer, or simultaneous first offers), (b) the dollar value of the first offer, (c) who made the first counteroffer, and (d) the dollar value of the counteroffer. A given dyad's data were included in analyses involving offers and counteroffers only if buyer and seller provided identical information regarding these offers. Buyers made the opening offer in 65 dyads, sellers made the opening offer in 94 dyads, and participants made simultaneous opening offers in 17 dyads. Information about opening offers was missing or unusable in 8 dyads.

To analyze buyers and sellers on a common scale, we converted offers and counteroffers into an economic distance from the offer-maker's reservation price. For example, a seller's offer of \$45 per unit was coded

Table 1
Descriptive Statistics and Intercorrelations for Participants in Buyer's Role in Study 1

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Extraversion	5.93	1.02	—									
2. Agreeableness	6.88	0.79	.17*	—								
3. Conscientiousness	6.71	0.97	.08	.20**	—							
4. Emotional Stability	5.40	1.10	-.07	.05	.33***	—						
5. Openness to Experience	6.72	0.79	.27**	.21**	.22**	.10	—					
6. Cognitive ability	604.82	55.44	-.11	-.21**	-.02	.12	.03	—				
7. Aspirations (<i>n</i> = 159)	15.17	6.81	-.14	-.05	-.04	.05	-.02	.06	—			
8. First offer (<i>n</i> = 65)	20.84	5.89	-.16	-.07	-.14	-.20	-.21	-.07	.59***	—		
9. Offer difference ^a (<i>n</i> = 84)	17.28	11.68	-.10	-.08	-.06	.12	.02	.02	.27*		—	
10. Economic gain (<i>n</i> = 180)	12.82	5.62	-.26***	-.07	.03	.07	.01	.09	.57***	.65***	.00	—

Note. *n* = 184 for correlations among personality variables and 166 for correlations between personality variables and cognitive ability. The *n*s vary for other correlations because of subsample limits shown for process variables.

^a Because negotiators make either the first offer or the counteroffer, correlations between variables 8 and 9 within role have no meaning.

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

as \$5 (\$45 – \$10); a buyer's counteroffer of \$12.50 was coded as 22.5 (\$35 – \$12.50). The distance between offers (for examining anchoring effects) was coded as the absolute value of the difference between offered prices. This index was larger the farther the counteroffer was from the first offer.

Aspiration levels. In the questionnaire, participants were asked (individually) whether they had identified, before the negotiation, a target price or aspiration level in excess of a minimum requirement for a deal. Asking participants for a retrospective judgment of prenegotiation aspiration is risky, because judgments may be biased by aspiration-level updates that occur as bargaining proceeds. However, we wanted to avoid giving cues as to appropriate or desirable actions in the simulation. Responses were provided in dollars per unit. Some participants provided a range (e.g., an aspiration for seller of \$30–\$35); in such cases we adopted the midpoint of that range (32.5 in this example) as the participant's aspiration level. We coded each aspiration as an economic distance from reservation price. Some participants were unable to report that they had generated a prenegotiation aspiration level (*n* = 25 buyers; *n* = 26 sellers); relevant analyses involving aspirations excluded these participants.

Economic gain. The settlement price determined the economic payoff for each party. We converted the final price to an economic distance from each party's reservation price. For example, if the two parties

settled at \$23, the seller's gain was coded as 13 (\$23 – \$10), and the buyer's gain was coded as 12 (\$35 – \$23).

Results

Descriptive Statistics and Preliminary Analyses

Means, standard deviations, and intercorrelations for the independent and dependent measures are shown in Table 1 (for participants in the buyer's role) and Table 2 (for participants in the seller's role). The correlations in the two tables confirm that our measure of negotiator aspirations was statistically independent of disposition measures. This independence was necessary to test our prediction that aspirations would moderate the influence of personality on negotiation processes and outcomes. Correlations in the two tables reveal significant bivariate relationships among the economic measures of negotiating process and performance (aspirations, offers, gain), which are consistent with assumptions regarding the dynamics of bargaining outcomes (e.g., a correlation between first offers and final settlement values).

Table 2
Descriptive Statistics and Intercorrelations for Participants in Seller's Role in Study 1

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Extraversion	5.93	1.27	—									
2. Agreeableness	6.82	0.79	.18*	—								
3. Conscientiousness	6.61	0.95	.16*	.26***	—							
4. Emotional Stability	5.25	0.96	.17*	.15*	.11	—						
5. Openness to Experience	6.63	0.84	.40***	.20**	.19*	.06	—					
6. Cognitive ability	600.48	61.95	-.23	-.23**	-.36***	.03	-.14	—				
7. Aspirations (<i>n</i> = 158)	16.16	8.36	-.05	.00	.00	.00	-.06	-.07	—			
8. First offer (<i>n</i> = 94)	24.44	9.50	-.08	-.08	.05	-.13	.08	-.22*	.68***	—		
9. Offer difference ^a (<i>n</i> = 56)	14.07	8.68	-.15	-.29*	-.34*	.05	-.26	.02	.60***		—	
10. Economic gain (<i>n</i> = 180)	12.18	5.62	-.11	-.06	-.09	-.04	-.13	.02	.60***	.38***	.31*	—

Note. *n* = 184 for correlations among personality variables and 166 for correlations between personality variables and cognitive ability. The *n*s vary for other correlations because of subsample limits shown for process variables.

^a Because negotiators make either the first offer or the counteroffer, correlations between variables 8 and 9 within role have no meaning.

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

Table 3
Regression Results: Effects of Personality and Cognitive Ability on Anchoring in Distributive Negotiation (Study 1)

Dependent variable: Offer-counteroffer distance	Individual difference included in models			
	Extraversion	Agreeableness	Conscientiousness	Cognitive ability
First offer extremeness	0.76***	0.74***	0.75***	0.69***
Individual difference	-0.15***	-0.10*	-0.08	0.04
Model R^2 (adj.)	0.58***	0.57***	0.56***	0.47***
<i>df</i>	2, 137	2, 137	2, 137	2, 104

Note. Estimates are standardized regression weights. Degrees of freedom are reduced from the full sample size because these models exclude dyads that reported simultaneous first offers and dyads that did not provide complete information on opening offers and counteroffers. adj. = adjusted.

* $p < .05$, one-tailed. *** $p < .001$, one-tailed.

To ensure that our assignment of participants to buyer and seller roles did not inadvertently create role differences on independent variables, we performed t tests comparing the mean levels of personality and cognitive ability measures by role. None of six tests yielded a significant difference between buyers and sellers (all $ps > .16$). Using chi-square tests, we also found no role differences based on sex or citizenship ($ps > .28$).

Extraversion

We expected that Extraversion would be associated with susceptibility to anchoring and lower levels of economic gain. We examined anchoring by treating the difference between the first offer and the counteroffer as a dependent variable (see Table 3). Because the magnitude of the first offer constrains the available range for counteroffers, we controlled for the magnitude of the initial offer. In the first column of the table, the regression weight for the counteroffer-maker's Extraversion ($\beta = -0.15$, $p < .001$) reveals an inverse relationship with the offer-counteroffer difference, indicating that anchoring was higher among participants higher in Extraversion.

With respect to economic gain, we conducted separate analyses for buyers and sellers because interaction leading to a settlement renders them interdependent. Combining buyer and seller outcomes into a single analysis would violate the assumption of independent observations in ordinary least squares regression (see Kenny & Judd, 1986). Zero-order correlations showed that the expected inverse relationship between Extraversion and gain was apparent among participants in the buyer role, $r(180) = -.26$, $p < .001$, but weak for sellers, $r(180) = -.11$, $p < .08$, one-tailed. This difference between buyers and sellers may stem in part from an imbalance in the economic structure of the negotiation: There was more room for sellers to make extreme first offers than there was for buyers to make extreme first offers—buyers, after all, cannot make offers that are at or below zero. If extraverts are disadvantaged by their susceptibility to anchoring, this was more of a problem for buyers in this negotiation, because they faced the possibility of more extreme offers by sellers.¹

As a more powerful test of the influence of Extraversion on economic gain, we isolated dyads in which a high-Extraversion individual (Extraversion more than 0.5 SD above the mean for

all study participants) negotiated with a low-Extraversion individual (Extraversion more than 0.5 SD below the mean). There were 34 such dyads—21 involving a high-Extraversion seller and low-Extraversion buyer, and 13 involving the reverse. The mean settlement price for dyads with high-Extraversion sellers ($M = 18.01$, $SD = 4.30$) was lower than that for dyads with high-Extraversion buyers ($M = 23.07$, $SD = 6.13$), $t(32) = 2.83$, $p < .009$. Because lower settlement values favor buyers, this result further suggests that Extraversion is a liability rather than an asset.

To see if the liability of Extraversion stems solely from the initial exchange of offers, we used multiple regression to partial out the midpoint between opening offers from the correlation between Extraversion and gain. This analysis revealed no relationship between Extraversion and gain for either buyers ($\beta = -0.05$, $p < .38$) or sellers ($\beta = -0.03$, $p < .57$), suggesting that the effects of Extraversion were felt in the early stages of the negotiation.

Agreeableness

We expected that Agreeableness would be associated with less extreme first offers, higher susceptibility to anchoring, and lower levels of economic gain. For bargainers, regardless of role, who made an independent (i.e., nonsimultaneous) opening offer, zero-order correlations showed no relationship between Agreeableness of the first offer-maker and the extremeness of first offer, $r(154) = -.06$, $p < .47$. With respect to anchoring, the regression weight for the counteroffer-maker's Agreeableness in a model predicting offer-counteroffer distance (Column 2 in Table 3) was in the predicted direction ($\beta = -0.10$, $p < .05$), indicating (for participants who did not make the opening offer) that higher levels of Agreeableness were associated with a greater susceptibility to anchoring.

There was no simple, overall relationship between Agreeableness and economic gain for either buyers, $r(180) = -.07$, $p < .38$, or sellers, $r(180) = -.06$, $p < .42$. However, for sellers,

¹ There were pronounced differences in the ranges (3–65 for sellers, 5–29 for buyers) and standard deviations (9.5 for sellers, 5.9 for buyers) of the relative measure of first offer extremeness.

when gain was regressed onto Agreeableness with the midpoint between early offers included as a control variable ($\beta = 0.76$, $p < .001$), Agreeableness was associated with lower gain ($\beta = -0.12$, $p < .04$; overall model $R^2 = .59$; $df = 2, 126$; $p < .001$). Thus, it appears that there are additional detrimental effects of Agreeableness (beyond anchoring) resulting from its influence on what takes place following the exchange of initial offers.

Conscientiousness and Cognitive Ability

We predicted that Conscientiousness and cognitive ability would be positively associated with economic gain in distributive negotiations. Neither had the effects we expected. There was no overall relationship between economic gain and Conscientiousness for either buyers, $r(180) = .03$, $p < .70$, or sellers, $r(180) = -.09$, $p < .22$. There was also no relationship between gain and cognitive ability for either buyers, $r(162) = .09$, $p < .24$, or sellers, $r(164) = .02$, $p < .80$. As shown in Table 3 (Columns 3 and 4), neither Conscientiousness nor cognitive ability was related to susceptibility to anchoring. Also, neither was associated with economic gain either directly or controlling for the effects of early offers. These results suggest that for distributive bargaining, planfulness, efficiency, organization, and complex problem-solving ability seem to be relatively unimportant. This stands in contrast to the more social aspects of disposition—Extraversion and Agreeableness—that do affect both the process and results of distributive bargaining.

Aspirations as Moderators

We had predicted that the influence of personality differences on bargaining processes and outcomes would be stronger when

bargaining aspirations were lower. To test for the moderating role of aspirations, we added the aspirations variable and an interaction term to the regression models described above (see Table 4). We considered two dependent variables: anchoring and economic gain. For each dependent variable, we estimated separate models for Extraversion, Agreeableness, and Conscientiousness.

Anchoring as a dependent variable. For each personality measure, we regressed the offer-counteroffer distance variable on the counteroffer-maker's personality variable, the counteroffer-maker's level of aspiration, and a multiplicative interaction term, controlling for first-offer extremeness (Model A in Table 4). As with main effects discussed earlier, we controlled for first-offer extremeness because the magnitude of the first offer restricts the range of available counteroffers. For both Extraversion (first column of Table 4) and Agreeableness (second column of Table 4) the regression weight for the interaction term was significant. There were no significant effects for Conscientiousness. To interpret these interactions, we used fitted models to calculate estimated values of the dependent variable based on values of the independent variables found at the 25th and 75th percentiles of each distribution, and mean values of the control variable. These estimates are graphed in Figure 1.

The graph in Part A of Figure 1 shows, consistent with our prediction, that the influence of Extraversion on interoffer distance was greater among counteroffer-makers with low aspirations than among those with high aspirations. Among low-aspiration negotiators, those higher in Extraversion were anchored more than those low in Extraversion. The graph in Part B of Figure 1 shows, consistent with our prediction, that Agreeableness made negotiators more susceptible to anchoring when aspirations were low than when aspirations were high.

Table 4
Moderated Regression Results Testing Interactions in Study 1

Predictor	Personality variable included in models		
	Extraversion	Agreeableness	Conscientiousness
Model A: DV = offer-counteroffer distance			
First offer extremeness	0.81***	0.80***	0.79***
Personality variable	-0.26**	-0.23	0.07
Aspiration	0.03	-0.43	0.62
Personality \times Aspiration	0.49*	0.94*	-0.10
Model R^2 (adj.)	0.76***	0.75***	0.74***
<i>df</i>	4, 112	4, 112	4, 112
Model B: economic gain (sellers)			
First offer-counteroffer midpoint	0.62***	0.66***	0.67***
Personality	0.39***	-0.53***	0.02
Aspiration	1.15***	-1.60**	0.60
Personality \times Aspiration	-1.09***	1.77**	-0.50
Model R^2 (adj.)	0.63***	0.62***	0.59***
<i>df</i>	4, 124	4, 124	4, 124

Note. Estimates are standardized regression weights. Degrees of freedom are reduced from the full sample size because these models exclude dyads that reported simultaneous first offers, dyads that did not provide complete information on opening offers and counteroffers, and individual participants who did not report prenegotiation aspirations. DV = dependent variable; adj. = adjusted.

* $p < .05$. ** $p < .01$. *** $p < .001$.

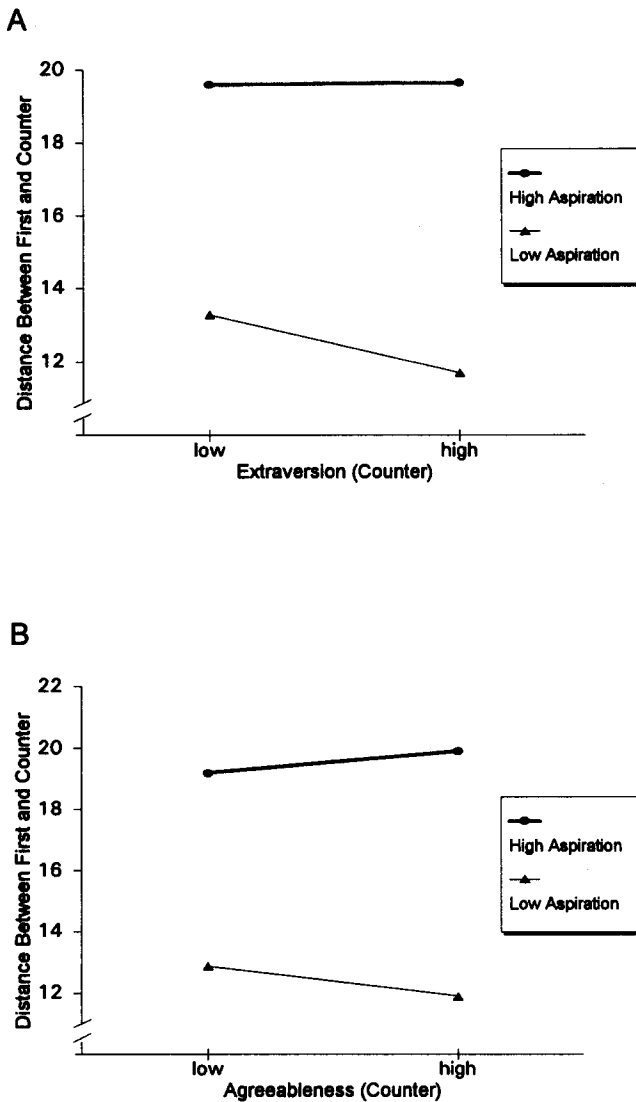


Figure 1. Graphs illustrating interactions between aspirations and personality in the prediction of anchoring, controlling for extremeness of first offer (Study 1).

Economic gain as a dependent variable. We estimated models for buyers and sellers separately because, as discussed above, for any given dyad, the result for buyer and seller is a function of their joint interaction; as such, their outcomes (which are perfectly inversely correlated within the dyad) cannot be considered simultaneously. Each model regressed economic gain on the negotiator's personality factor measure, the negotiator's level of aspiration, and a multiplicative interaction term. There were no significant interactions in the analysis of buyer gains. The unbalanced results, again, may stem from a floor effect in the data for buyers as a result of the structure of the bargaining simulation.²

For sellers, significant interactions between personality and aspirations emerged for Extraversion and Agreeableness (see Model B in Table 4). These interactions were present both with

and without inclusion of a term for the midpoint value between first offer and counteroffer; in Table 4 we show results controlling for the midpoint to examine the influence of bargaining beyond the initial exchange of offers. There were no interactions between aspirations and Conscientiousness. To interpret the interactions involving Extraversion and Agreeableness we once again calculated estimated values of the dependent variable based on values of the independent variables found at the 25th and 75th percentiles of the distribution of each variable, and mean values of the control variable. Graphs containing plots of these estimates appear in Figure 2.

Part A of Figure 2 shows the interaction between Extraversion and aspirations in the prediction of gain. Contrary to expectations, Extraversion was associated with better outcomes when aspirations were low (among sellers). This indicates that Extraversion may be of some benefit to negotiators. Although Extraversion appears to be a disadvantage for low-aspiration negotiators in the early stages of bargaining, some tactics that are beneficial later on, such as declaring positional commitments, may be deployed more effectively by extraverts. Overall, our findings suggest the following pattern: Extraversion may be a liability in situations where anchoring is apt to occur (i.e., situations that lend themselves to extreme but credible first offers) but an advantage in cases where anchoring is less likely (which, because of the task's price structure, was the case for sellers in our bargaining simulation).

Part B of Figure 2 displays the interaction between Agreeableness and aspirations in the prediction of gain. Here the shape of the interaction matches the prediction that personality matters more when aspirations are diminished. It indicates that Agreeableness had little influence when aspirations were high, but undermined the attainment of economic outcomes when aspirations were low. This suggests that once opening offers have been exchanged, Agreeableness can be especially costly for negotiators with low aspirations.

Discussion

Our findings in Study 1 are consistent with predictions that Extraversion and Agreeableness would be potential liabilities for bargainers in competitive negotiation encounters in which the distribution of resources, rather than the integration of mutual interests, is at stake. Furthermore, by examining patterns of offers and counteroffers, we were able to uncover effects of personality factors at different stages in distributive negotiation. Extraversion appears to have adverse effects early in negotiations, when anchoring is a potential problem, but may help later when other tactics are more influential. Agreeableness seems to be a liability throughout a distributive bargaining encounter. High-Agreeable negotiators are susceptible to being anchored by early offers and are at risk for losing ground after the initial exchange of offers.

² Because the zone of potential agreement (the distance between reservation prices) ranged from 10 to 35, there existed a lower barrier to aspiration levels that buyers could adopt. Evidence for this effect is found in differences between buyers and sellers in the ranges (0–75 for sellers, 0–30 for buyers) and standard deviations (8.4 for sellers, 6.8 for buyers) of the relative measure of aspirations.

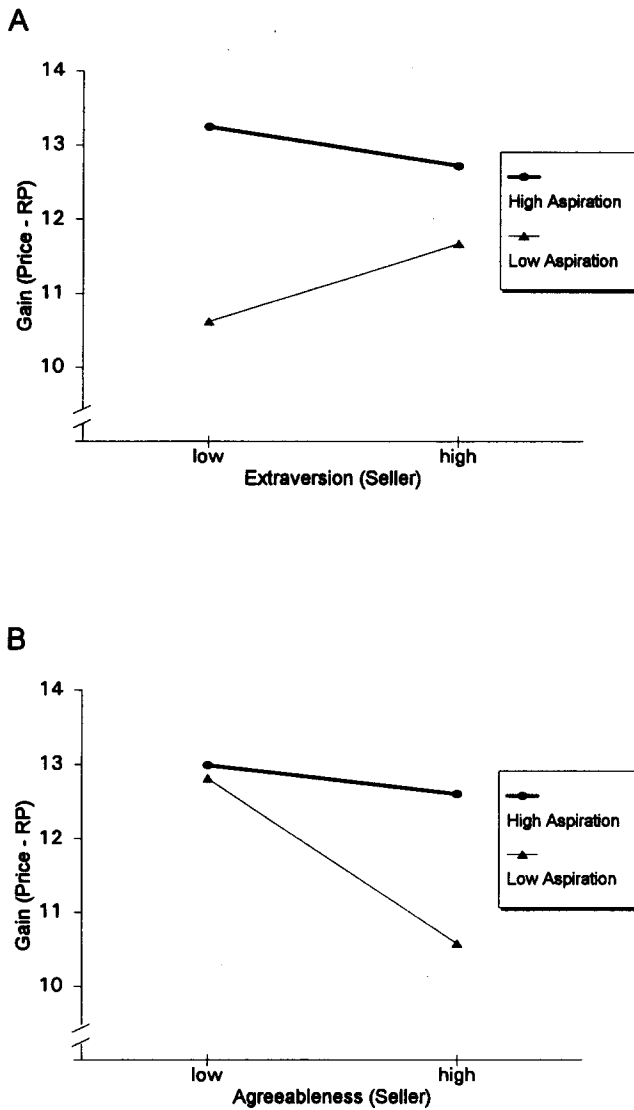


Figure 2. Graphs illustrating interactions between aspirations and personality in the prediction of economic gain, controlling for midpoint between initial offers (Study 1). RP = reservation price.

The finding that there was no role for Conscientiousness or cognitive ability was unexpected. This is intriguing in light of the widely held assumption that preparation and analysis are cornerstones of success in negotiation. Generalizability may be limited, however, by the constraints of the simulation. In our simulation, opportunities for complex information processing were diminished by the provision of basic information about objectives, reservation prices, and no-agreement alternatives. Opportunities for information processing are more substantial when one must gather information about and invent novel solutions to complex, ill-structured problems. Our results are likely to be most valid for real-world bargaining situations that require relatively little analysis and are primarily a matter of nerve and tactics (e.g., a used-car purchase) or, in a more complex situation, for the phase of bargaining that occurs after any required analysis.

Finally, there was support for the proposition that personality and aspirations interact to predict behavior and outcomes in distributive negotiation. We had predicted and found that personality effects matter more when bargainer aspirations are low rather than high. In light of the liabilities of Extraversion and Agreeableness discussed above, our findings caution that low-aspiration bargainers in distributive situations may be more at risk of becoming victims of their own personality traits than bargainers who bring greater expectations of success into the encounter.

Study 2: Integrative Bargaining

In Study 2 we examined the roles of personality and cognitive ability in a two-party mixed-motive bargaining task that was complex and ill structured (i.e., not inherently quantifiable), with integrative potential. We expected that Extraversion, Agreeableness, Conscientiousness, and cognitive ability would be positively associated with negotiator effectiveness and the realization of integrative potential.

Method

Participants

Ninety-eight graduate students enrolled in a graduate management course participated for course credit. Seventy-seven participants (79.4%) were male, and 17 (17.5%) were citizens of a country other than the United States (data on sex and citizenship were missing for 1 participant). The average age of participants was 26.3 years ($SD = 2.7$).

Procedure

We used a role-play simulation of a two-party business negotiation between the developer of a new mall and a potential anchor store in the mall. At issue was a clause in the contract that affects how much flexibility the stores' representatives (tenants) have to use or sublet their space in any way they would like. The outcome of this negotiation is contract language that may include many elements (e.g., at what point in the future the store can be more flexible, what kinds of uses might be restricted, how much of the space could be sublet to others). There is much room in this negotiation for integrative outcomes that meet the interests of both parties. This type of mixed-motive negotiation is much closer to real-world negotiations than many integrative simulations, because negotiators must develop on their own options to solve a complex problem and must analyze for themselves the value of different options.

We randomly paired participants into 49 dyads, assigning 1 member of each dyad to the role of developer and the other to the role of store representative (tenant). Each participant was provided with written role instructions explaining the issues involved and providing a detailed analysis of his or her assigned party's goals and interests. We instructed participants to study the instructions carefully in order to understand their needs and interests of their assigned roles, and then meet with the assigned opponent to negotiate a deal that served their assigned party's interests. After negotiating, dyad members wrote out their agreement (if any) and signed it. Forty-three dyads reached agreement; 6 ended in an impasse.

Measures

Personality. As with Study 1, participants completed Goldberg's (1992) unipolar Big Five instrument several weeks before undertaking

Table 5
*Descriptive Statistics, Intercorrelations, and Reliability Estimates
 for Individual-Level Measures in Study 2*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Extraversion	5.95	1.23	(.94)					
2. Agreeableness	6.84	0.81	.17	(.88)				
3. Conscientiousness	6.68	0.91	.05	.07	(.86)			
4. Emotional Stability	5.19	1.08	.10	.08	.24*	(.87)		
5. Openness to Experience	6.64	0.89	.28**	.18	.17	-.01	(.86)	
6. Cognitive ability	601.61	62.65	-.19	-.12	-.18	.13	-.19	—

Note. $n = 97$ for correlations among personality variables and 93 for correlations with cognitive ability. Scale reliability estimates (coefficient alphas) are shown along the diagonal in parentheses where appropriate. * $p < .05$. ** $p < .01$.

the bargaining task. In addition to the five personality scores for each of the 2 participants within a given dyad, we created a joint dyad score for each personality variable by summing the scores for the 2 dyad members. Personality data were missing for 1 participant; data from the dyad that included this participant were excluded from relevant analyses.

Cognitive ability. As in Study 1, we used participant scores on the GMAT as a measure of general cognitive ability. For each negotiating dyad we created a dyad-aggregated cognitive ability score by summing the scores for the 2 dyad members. Cognitive ability scores were unavailable for 6 participants; data for dyads including those participants were excluded from relevant analyses.

Integrativeness of settlement. Because negotiations were qualitative statements of agreement, it was necessary to code the results. Two doctoral students familiar with negotiation concepts but blind to our research purposes were familiarized with the needs of each side in this negotiation and trained to assess the value of a particular deal for each of the parties. The coders then independently coded each of the 43 agreements in three ways. First, they rated agreements in terms of their value to the party representing the developer. Second, they rated agreements in terms of value to the party representing the store owners (tenants). Third, they rated agreements in terms of *integrativeness*, which we defined as the degree to which the deal bridged the interests of both parties and discovered all potential joint gains.

The coders performed these ratings using a structured Q sort technique. Q methods provide ways to quantify an array of qualitative stimuli so as to capture and make comparisons among individual points of view (Brown, 1986). Following a procedure described by Kerlinger (1986), the coders were forced to fit agreements into a quasi-normal distribution across a 7-point scale. For each of the three ratings, coders were given the text of the 43 agreements on separate cards along with a template of a quasi-normal distribution containing 43 spaces. They were instructed to rate agreements according to the criteria for that particular sort (e.g., value to the developer) by placing each card somewhere in the distribution. The result for each Q sort was a normally distributed variable with each negotiated settlement assigned a value between 1 and 7.

For each of the three sorts, we assessed interrater agreement by examining intercorrelations between the scale values assigned by the coders. Levels of agreement on all three ratings were acceptable: For developer's utility, $r(43) = .58$ ($\alpha = .74$); for store's utility, $r(43) = .69$ ($\alpha = .81$); and for integrativeness, $r(43) = .67$ ($\alpha = .80$). By averaging the values assigned in each of the three sorts by the coders, we created three variables: utility to developer, utility to store, and integrativeness. We created a fourth variable, joint utility, by summing the utility-to-developer and utility-to-store variables. Integrativeness and joint utility should be correlated, because conceptually they are alternative ways to measure the realization of joint gains; they were correlated in our data, $r(43) = .52$, $p < .001$.

Results and Discussion

Preliminary Analyses

Means, standard deviations, and intercorrelations for the individual-difference measures in Study 2 are shown in Table 5. Correlations and levels of coefficient alpha indicate adequate levels of convergent and discriminant validity among the measures of personality and cognitive ability. We performed *t* tests that compared mean levels of personality and cognitive ability by role to ensure there were no unintended role differences in the independent variables. None of six tests yielded a difference between roles (all $ps > .27$). We show in Table 6 correlations among dyad-level variables, which are the basis for our analysis of the relationships among personality, cognitive ability, and bargaining outcomes.

Analysis of Personality

We predicted that the two "social" personality factors—Extraversion and Agreeableness—would be positively associated with outcomes. Table 6 shows that dyad-aggregated Extraversion and Agreeableness scores correlated with neither integrativeness nor joint utility. At the individual level of analysis, there were positive but nonsignificant associations between Extraversion and individual negotiator utility (for negotiators in the role of store representative, $r[42] = .13$, $p < .43$; for negotiators in the developer's role, $r[43] = .18$, $p < .26$), and no apparent relationship between Agreeableness and utility (for store representatives, $r[42] = .00$, $p < .99$; for developers, $r[43] = -.06$, $p < .73$). Apparently, simply being open, talkative, and agreeable does not by itself contribute to the problem solving and creativity that are necessary for the realization of joint gains.³

³ We draw this conclusion with caution, however, given limitations that the modest sample size in Study 2 places on statistical power compared to Study 1. In particular, the size of the correlations for Extraversion at the individual level leaves open the possibility that Extraversion does help bargainers to some extent realize individual utility. The same cannot be said for the relationship between dyad-aggregated Extraversion and joint outcomes in Table 6, which are very small. For Agreeableness, the small magnitude of all correlations in Study 2 likewise diminishes the likelihood that meaningful effects were masked by a lack of power.

Table 6
Descriptive Statistics and Intercorrelations for Dyad-Level Measures in Study 2

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Dyad Extraversion	11.89	1.81	—									
2. Dyad Agreeableness	13.66	1.08	.29*	—								
3. Dyad Conscientiousness	13.35	1.34	.18	.31*	—							
4. Dyad Emotional Stability	10.39	1.65	.08	.15	.25	—						
5. Dyad Openness	13.30	1.38	.42**	.32*	.09	-.13	—					
6. Dyad cognitive ability	1,200.00	92.69	-.14	-.21	-.19	.14	-.23	—				
7. Utility for developer	4.00	1.49	.07	-.14	-.25	.10	.09	-.08	—			
8. Utility for store	4.00	1.54	-.07	.16	.17	.04	-.08	.39*	-.69***	—		
9. Integrativeness	4.00	1.53	.05	.00	.01	.30	-.31*	.50**	.22	.18	—	
10. Joint utility	8.00	1.19	.00	.03	-.10	.19	.01	.40*	.36*	.42**	.52***	—

Note. *ns* vary between 38 and 49.

* $p < .05$. ** $p < .01$. *** $p < .001$.

We had predicted that the planfulness and the achievement orientation that underlies Conscientiousness would contribute to integrative settlements. Dyad-aggregated Conscientiousness was not related to either joint utility, $r(42) = -.10$, $p < .55$, or integrativeness, $r(42) = .01$, $p < .96$. At an individual level of analysis, the store negotiator's Conscientiousness was weakly correlated with that role's own utility, $r(42) = .28$, $p < .10$, and negatively correlated with opponent's utility, $r(42) = -.28$, $p < .05$. However, the developer negotiator's Conscientiousness was not correlated with either that role's own utility, $r(43) = -.06$, $p < .71$, or with opponent's utility, $r(43) = .20$, $p < .19$. Thus, Conscientiousness helped one side, but it did not help the dyad create joint gains.

Analysis of Cognitive Ability

Dyad-aggregated cognitive ability correlated meaningfully with both joint utility, $r(38) = .40$, $p < .02$, and integrativeness, $r(38) = .50$, $p < .002$. Apparently, the identification of pareto-efficient outcomes is enhanced by the ability to manage ambiguous information and solve complex problems. This finding in tandem with the lack of a role for Extraversion and Agreeableness suggests that maximization of integrative potential stems from how the parties interact with the problem, not just how they interact with each other.

Do gains that accompany cognitive ability require high cognitive ability for both parties or just for one party? We addressed this issue in two ways. First, we examined the relationship between the maximum cognitive ability score (the higher score within each dyad) and negotiation outcomes. Maximum cognitive ability was associated with joint utility, $r(38) = .31$, $p < .06$, and integrativeness, $r(38) = .40$, $p < .02$, indicating that integrative outcomes can be enhanced by one party's cognitive ability, regardless of the other party's cognitive ability.

Second, we examined the cognitive ability "matchups" within negotiating pairs by performing a median split on negotiators' cognitive ability scores, classifying those with scores at or above the median as "high" and those below the median as "low." Negotiating pairs were thus classified into one of three categories of cognitive ability matchup: high-high ($n = 8$), high-low ($n = 18$), and low-low ($n = 12$). An analysis of variance with the joint utility measure as the dependent variable

yielded a main effect for pair classification, $F(2, 35) = 3.94$, $p < .03$. Duncan's multiple-range test revealed that joint utility for high-high pairs ($M = 8.94$, $SD = 1.35$) was greater than joint utility for high-low pairs ($M = 7.97$, $SD = 1.06$) and low-low pairs ($M = 7.50$, $SD = 1.02$), $p < .05$. Results were similar when the integrativeness measure was used as the dependent variable. Taken together, results indicate that settlement integrativeness can be enhanced by the cognitive ability of one party alone and enhanced further by the cognitive ability of the other party.

Last, although cognitive ability enhanced joint outcomes, did it help the individual with higher cognitive ability? In other words, given the mixed-motive nature of these (and most) negotiations, did cognitive ability help negotiators claim more of the added value that they created? Dyad-aggregated cognitive ability was correlated positively with utility for the store ($r = .39$, $p < .02$) but was uncorrelated with utility for the developer ($r = -.08$, $p < .64$). Looking separately at correlations between each side's cognitive ability and individual utilities, we noted that cognitive ability of the store negotiator was unrelated to the store's utility ($r = .07$, $p < .66$) or the developer's utility ($r = .14$, $p < .41$). Cognitive ability of the developer negotiator was positively associated with utility for the store ($r = .50$, $p < .001$) and weakly negatively related to own utility ($r = -.26$, $p < .10$). Apparently, in this negotiation the benefits of complex-information-processing ability went primarily to one party—the store—and it was the opponent's cognitive ability that provided these benefits.

General Discussion

The most clear and important result of our studies is the relative impact of two sets of characteristics: those that affect bargainers' approach to social interaction that occurs during negotiation (Extraversion and Agreeableness) and those that affect bargainers' approach to the negotiation problem (cognitive ability and Conscientiousness). Our findings suggest that the first set of factors has an impact on distributive bargaining but not on integrative bargaining, and the second set of factors has an impact on integrative bargaining but not on distributive bargaining. Thus, distributive bargaining, which is governed in large part by gamesmanship, nerve, and aggressiveness, is af-

ected by personality factors that influence social interaction but not by problem-solving ability and planfulness. In contrast, integrative bargaining, which is governed primarily by problem solving, is affected by enhanced understanding, creativity, and care but not by differences in approach to social interaction. The relative emphasis on tactics in distributive bargaining and problem solving in integrative bargaining seems to drive which individual differences are most important to understanding the influence of bargainer characteristics on negotiation outcomes.

In distributive bargaining, our findings suggest that Extraversion is a liability early in negotiations, when anchoring occurs, but may be of some benefit later in negotiations, when commitment tactics are most influential. Agreeableness also increased bargainers' susceptibility to anchoring and had a negative effect on outcomes for bargainers with low aspirations. These findings are consistent with arguments that dispositional influences are more pronounced where behaviors are not otherwise driven by strong contextual factors. For both Extraversion and Agreeableness, interactions between personality and aspirations suggest that distributive negotiators should keep their aspirations high to avoid any pitfalls that may occur because of personality.⁴

In a bargaining encounter with integrative potential, Extraversion and Agreeableness had no effect on outcomes. However, the achievement of pareto-efficiency in complex integrative negotiations appears to benefit from high levels of cognitive ability. We found that joint outcomes were enhanced by one or both parties' cognitive ability. However, a curious finding was that cognitive ability tended to help the *other* party most. The smarter negotiator appears to be able to understand his or her opponents' true interests and thus to provide them with better deals at little cost to him- or herself, which is the cornerstone of integrative bargaining, but to be unable to extract more utility for him- or herself in the process. The effects of Conscientiousness are less clear than those of cognitive ability, but for the party that (by virtue of the bargaining situation) has the most potential for gains due to creativity, Conscientiousness was correlated with higher personal utility.

An issue left unexplored is the role of aspirations in integrative bargaining. Because of the qualitative nature of the integrative negotiation simulation in Study 2, we could not measure bargainer aspirations as in Study 1. We can see no basis to argue that the moderating influence of aspirations would operate differently in a situation with integrative potential than it does in the purely distributive case, but confirmation of this assumption requires future empirical attention. In a more broad sense, the findings of the present studies should reinforce for negotiation researchers the importance of examining individual differences in conjunction with motivational influences and other contextual factors. Also, the present studies focused on the nature of bargaining outcomes, not on the likelihood that negotiators would reach agreement at all (i.e., avoid an impasse). Individuals with certain dispositional traits may reach more but less favorable agreements, whereas others may get better agreements, but less frequently. A complete understanding of the role of individual differences requires research attention to the dynamics of agreement and impasse, not just to the nature of achieved settlements.

We close with a brief discussion of factors that limit the generalizability of our findings. First, the participation of graduate management students brought more experience in the kinds

of situations being simulated than the typical psychology subject pool participant but at the same time may have suppressed effects because we could not manipulate the composition of negotiating dyads. Experimental participation requirements are generally not appropriate in graduate management courses. In classroom simulations where outcomes are part of performance assessment it would be ethically inappropriate to incorporate manipulations expected to have a performance impact. Thus, our ability to detect dispositional effects was partially compromised by random assignment to roles and dyads.

Second, our inability to detect a role for Conscientiousness in either study raises questions about sample-related external validity. One could argue that the participation of graduate management students at a selective university risks a loss of power because of range restriction on an achievement-orientation measure such as Conscientiousness. Although settling this issue requires further studies sampling from other populations, we note that variation in the Conscientiousness measure in both studies reported here was no less than that for other individual-difference measures that did yield detectable effects.

Third, the generalizability of our conclusions may also be limited by the pronounced differences between the distributive and integrative bargaining tasks. These differences were consistent with our intention to use realistic, relatively unstructured tasks that allow participants to generate their own issues and solutions rather than structure settlements around a predetermined set of possibilities. However, it is possible that differences between distributive and integrative negotiation can be explained in alternative ways, such as by how parties cognitively label the distinct issues found in different simulations. Our findings provide a measure of circumstantial support for Person \times Situation interactions involving distributive versus integrative tasks, but corroborating these interactions requires greater experimental control of task differences.

In conclusion, we provided in this article a comprehensive analysis of two components of individual difference—personality and cognitive ability—and examined their effects on both integrative and distributive bargaining. This allowed us to overcome one limitation of previous research: a tendency to examine individual differences within only one type of bargaining context (most often, PD games). Future research should look further at how individual differences are related to process features that determine bargaining outcomes. Our studies offered evidence pertaining to the initial exchange of offers in distributive bargaining but did not include a fine-grained analysis of strategies and tactics. It appears that Extraversion, Agreeableness, and cognitive ability are relevant, but more research is needed to shed light on the interpersonal processes that explain why these characteristics have the influences they do.

⁴ Alternatively, one could argue that our view of negotiation "outcomes" is restrictive in light of social traits such as Agreeableness. For instance, if a high-Agreeable negotiator places a higher priority on relationship maintenance than on economic profit, then an analysis of the influence of aspirations or any other factor that focuses on economic gain is incomplete from that negotiator's point of view. In this sense, the generalizability of our results is limited to bargaining encounters in which economic outcomes are paramount.

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