Born and Raised: Intelligence and Personality Matter in Negotiations

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Abstract

The prevailing opinion is that negotiators are "made, not born." Multiple studies have concluded that cognitive ability and the Big Five personality traits likely have no impact on negotiation outcomes. Other studies report mixed or inconclusive results. This meta-analysis shows that, in certain circumstances, cognitive ability and certain personality traits have an important effect on negotiation outcomes. These effects are stronger for more complex negotiations where joint outcomes are the goal. We argue that firms should consider cognitive ability and personality measures in selecting and training negotiators.

Introduction

"It is an axiom of this book that negotiators are made, not born."
(The Practical Negotiator, Zartman & Berman, 1983)

Negotiation, whether explicit or implicit, is an important part of almost all jobs, from the lawyer who advocates on behalf of their client to the mechanic who discusses the costs and benefits of potential repairs with their customer. Entire industries of for-profit negotiation training programs have arisen, and top business programs offer courses in negotiation, all in recognition of the importance of negotiations at work. Much of the instruction offered is predicated on the idea that great negotiators are not born, but made (there would be little incentive to take the course otherwise). However, we know that cognitive ability (Schmidt, 2002) and the Big Five personality dimensions (Barrick & Mount, 1991) play an important role in job performance. It would therefore stand to reason that these inherent traits might have an effect on negotiations success.

The empirical literature is mixed on whether great negotiators are "born" or "raised." Many recent empirical studies on negotiation have generally reported that cognitive ability and the Big Five personality dimensions (extraversion, conscientiousness, openness to experience, emotional stability, and agreeableness) have no significant impact on negotiation success. We set out to test these findings through the use of meta-analytical techniques.

While there are not a large number of published meta-analyses in negotiations, a good meta-analysis can have great impact on our knowledge of the field. For example, many empirical studies indicated there was no conclusive difference in how men and women negotiate. Two

meta-analyses investigated these faulty conclusions and proved that there are real differences (Walters, Stuhlmacher & Meyer, 1998; Stuhlmacher & Walters, 2006).

Given the importance of the Big Five and cognitive ability to work performance in general, (Barrick & Mount, 1991; Schmidt, 2002), it is reasonable to believe that these factors may have meaningful relationships with negotiation outcomes in the real world. Meta-analysis is the correct methodological choice to analyze these existing empirical studies, to determine if sampling error, measurement artifacts, and incomplete analyses have adversely impacted our ability to understand how personality and cognitive ability influence negotiation outcomes. We propose that organizations may be able to take advantage of both traits and training to select the best negotiators and train them well (Fulmer & Barry, 2004).

Theory and Hypotheses

The Big Five Personality Dimensions

Negotiations such as those examined in management studies are typically dyadic exchanges in which the parties may engage in two processes, creating value (also known as "expanding the pie,") and then claiming value (also known as "dividing the pie"). A purely distributive negotiation consists of a set amount of value (a "fixed pie"), and each negotiator sets out to claim as much for him or herself as possible, at the cost of the other. An integrative negotiation consists of both creating and claiming value. The goals of an integrative negotiation could be to claim the maximum value for oneself, or to create the maximum value for both parties (e.g. where the negotiators are both members of one firm). While it is generally held that the parties should create value before claiming value in an integrative negotiation, in reality, both processes occur multiple times during a negotiation. The parties continually send signals to each other about their intentions, willingness to bargain, and positional strength. The negotiator's internal game is a cognitive decision-making process (Ma, 2008) of deciding what offers to make and what signals to send. These cognitions are not only influenced by the negotiator's personality, but also filtered through it as they are transmitted to the negotiating partner. The negotiator's personality may determine how the negotiator forms a strategy for the exercise and how they form outcome preferences (Ma, 2008). A negotiator's personality may also affect important aspects of negotiation behavior, such as competitiveness, collaborativeness, win-lose orientation, trust, yielding, and face-saving (Ma, 2008). These differences in approach could be associated with differences in negotiation outcomes.

The Big Five are well-established and valid measures of personality that are useful in examining complex behaviors and outcomes (Judge & LePine, 2007; Ma, 2008). As described by Costa & McCrae (1992; see also Barrick & Mount, 1991), the Big Five (and descriptive characteristics) include conscientiousness (dutiful, responsible, achievement-oriented), emotional stability (calm, secure, unemotional), extraversion (outgoing, gregarious, energetic), agreeableness (trusting, honest, considerate), and openness to experience (creative, artistic, intellectual). Each of these traits could be expected to have positive effects on negotiation success. For instance, an individual high on openness to experience might be able to brainstorm more creative solutions in a complex negotiation, thereby creating value. A person high on conscientiousness might proceed more dutifully through a negotiation exercise, being careful to explore all areas of potential value. A person who is more emotionally stable might be better able to deflect or ignore hardball tactics by a negotiation partner, and proceed toward a

successful resolution of the conflict. A person who is more agreeable might build more trust in a negotiation, inducing higher concessions from the other side. A person who is more extraverted might be able to extract more information from the person he/she is negotiating with.

Empirical studies have examined various traits on negotiations, from emotional intelligence to Machiavellianism, with varying results. Because of the strong body of literature and theoretical background underlying the Big Five, we chose to limit our meta-analysis to these traits. Some of the negotiations literature holds that personality traits have little to do with negotiation outcomes (Thompson, 1990), while other studies show that the Big Five may have an effect. For example, Barry and Friedman (1998) found that agreeableness and extraversion are negatively associated with success in distributive negotiations. The first finding, on agreeableness, is intuitive, as a highly agreeable person might tend to yield to their partner. The second finding, on extraversion, may seem less so. However, as Barry and Friedman point out, the gregariousness of an extrovert may lead them to overdisclose information in a competitive negotiation. Antonioni (1998) found a positive relationship between agreeableness and extraversion with successful integrative negotiation outcomes. Other studies find very small correlations between the Big Five and outcomes. The majority of empirical studies failed to find statistical significance in these relationships and thus accorded little value to the importance of personality.

Perhaps because of the mixed empirical results, researchers have not developed strong theory about which of the Big Five traits should impact negotiations, and how that should occur. However, because the Big Five have been shown to have considerable effect in many areas of job performance, we expected to find generally positive relationships between these traits and negotiation success, where the situation was right for the traits to have an impact. Even an incremental gain in understanding the relationship between personality and negotiation outcomes would be important, as an individual negotiator might handle millions of dollars' worth of negotiations each year for a company. If the inconsistent empirical results on personality and negotiations can be clarified, this could result in a great deal of utility to businesses in selecting negotiators. Therefore, we hypothesize: *Hypothesis 1: The Big Five personality traits will have a positive correlation with negotiation success for all negotiation types.*

Meta-analysis is an ideal method to explore the reported relationships between personality traits and negotiation outcomes, and to report any moderators. Some of the samples used in the empirical studies are idiosyncratic as compared to the business world as a whole. For instance, many studies report only one or two nationalities of negotiators, and often, one group is associated with an individualistic culture (e.g. the United States) and the other is associated with a more collectivist culture (e.g. China and Japan). Some studies use only student samples, and some use only experienced negotiators. By using meta-analysis, we can examine these samples together, weighted appropriately for size and corrected for measurement error, to determine effects across all samples. This will allow our results to generalize more aptly across real-life business settings, which are rarely so homogenous.

Cognitive Ability

As mentioned previously, cognitive ability is a very important predictor of work success (Schmidt, 2002). It also predicts many other important life outcomes, including educational attainment, delinquency and criminal behavior, socio-economic status, and health outcomes (Gottfredson, 1997). Therefore, it is surprising that studies have reported near-zero (Barry &

Friedman, 1998) or even negative (Kong & Bottom, 2010) correlations between cognitive ability and negotiation success. Other studies have found positive correlations between cognitive ability and outcomes, where success was measured by joint utility or how integrative the final agreement is (Barry & Friedman, 1998; Antonioni, 1998).

While non-findings in this relationship are puzzling, negative correlations are even more so. How is it possible that being less intelligent would lead to better outcomes in a cognitive process such as negotiation? Prior research tells us that intelligence should be an asset in any business transaction (Schmidt & Hunter, 1998). We would expect more intelligent negotiators to make fewer errors in judgment, and to have a more rational decision-making process (Fulmer & Barry, 2004). One possibility is that some of the existing studies failed to detect a relationship between cognitive ability and negotiation outcomes due to sampling error or measurement error. In this case, meta-analytic techniques should help us determine whether these findings can be corrected.

Another possibility is that the studies have failed to take into account certain moderators between cognitive ability and negotiation outcomes. Barry & Friedman (1998), for example, found a difference in the correlation between intelligence and outcomes when the negotiation was distributive versus when it was integrative. However, they downplayed this finding after doing post-hoc analyses that showed one of the parties typically claimed most of the value created in the integrative negotiation (even though individual economic gain was not the primary goal of the exercise). They noted that this value claimed was primarily correlated with the *opponent's* cognitive ability. They stated that how the negotiators interacted with the problem was more important than how they interacted with each other or how intelligent the negotiators were. Because cognitive ability has been shown as an important determinant of success in various areas of business and life in general, we chose to use meta-analysis to resolve the apparent discrepancy regarding intelligence and negotiations.

In examining the effect of cognitive ability in negotiations, we must be mindful that not all negotiating situations will require the same level of cognitive involvement. The typical negotiations class at the MBA level might build from very simple distributive negotiations in the early weeks to complex, multi-party, integrative negotiations in the final weeks. There is a well-established pool of negotiation cases used by many instructors, which list the time and skills needed for each exercise. In these authors' experience teaching negotiations, the truly skillful negotiators often do not emerge from the pack until the later exercises. Based on these ideas, we would expect cognitive ability to have a positive relationship with negotiation outcomes in more complex (e.g. integrative) negotiations. A consistent finding of a positive relationship between cognitive ability and outcomes would be useful in the selection and training of negotiators. Therefore, we hypothesize: *Hypothesis 2: Cognitive ability will have a positive relationship with negotiation success for all negotiations types.*

Theoretical Moderators

We believe that a negotiator's cognitive ability and personality may interact with the kind of outcome sought to influence what is measured as "success" for that negotiation. For instance, a more intelligent or conscientious negotiator may not rush to claim all the "pie" they can in a first negotiation if they reason that they may have repeat negotiations with a partner. We expect that a negotiator's personality may have more salience in a more complex (e.g. integrative) negotiation. Several studies examining joint outcomes of integrative negotiations have shown positive effects of the positive Big Five traits. Other studies state that positive traits may have a

negative effect in distributive negotiations (e.g. extraversion is a liability because it leads to early anchoring: Barry & Friedman, 1998). However, it is important to realize that from a practical standpoint, most distributive negotiation exercises are shorter and less complex than integrative negotiations. Trait activation theory (Tett & Guterman, 2000) tells us that a person may not make a behavioral expression of a trait until they are in a situation that arouses trait-relevant cues. For example, an aggressive person may not always act aggressively, but will do so when confronted by another aggressive person. In the studies reviewed for this analysis, it may be that individuals who possess higher levels of Extraversion, Agreeableness, or other traits do not express these traits unless they find the negotiation sufficiently complex and engaging. A negotiator's positive or negative personality traits may not be very important in a simple distributive negotiation, where the goal is essentially to meet between two price points. We expect that the negotiator's personality may interact with the goals of the negotiation, and have a greater effect in more complex situations. Therefore, we hypothesize: *Hypothesis 3: The Big Five personality traits will interact with negotiation type, such that the Big Five will have a stronger positive relationship with negotiation success in more complex, integrative negotiations.*

A more intelligent negotiator should be better able to understand the complexity of an integrative negotiation. Thus, a more intelligent negotiator should be able to create more integrative potential or a better joint outcome if that is the stated goal. Thus, we would expect a negotiator's cognitive ability to be more salient in more complex, integrative negotiations (Fulmer & Barry, 2004) than in simple, distributive negotiations.

In integrative negotiations, the negotiator may be required to "think on their feet," craft or abandon coalitions, or adapt to changing information (Fulmer & Barry, 2004). A more intelligent negotiator should better be able to determine the underlying or hidden interests of their negotiation partner, leading to better joint outcomes (Fulmer & Barry, 2004). While cognitive ability is not a trait per se, it is reasonable to extrapolate that a tendency to *use* one's powers of advanced cognition will be activated by a more challenging or engaging puzzle, such as a negotiation requiring joint outcomes and value creation. Thus, we expect that negotiators higher in cognitive ability will have better outcomes overall, and better outcomes in integrative negotiations than in distributive negotiations. Therefore, we hypothesize: *Hypothesis 4: Cognitive ability will interact with negotiation type, such that cognitive ability will have a stronger positive relationship with negotiation success in more complex, integrative negotiations.*

Methods

We analyzed our data using the Hunter and Schmidt (2004) meta-analysis random-effects method. Meta-analyses synthesize the findings of many small sample individual studies. Thus, the findings of meta-analyses are more precise and stable than primary studies alone (Schmidt, Shaffer, & Oh, 2008). The Hunter and Schmidt (2004) meta-analysis method is a random-effects model, which is preferable over fixed-effects models (Hunter & Schmidt, 2000). Fixed-effects models often show Type I biases in significance tests for mean effect sizes and moderator variables, and may generate confidence intervals for effect sizes narrower than their nominal width (Hunter & Schmidt, 2000). The Hunter and Schmidt (2004) method allows us to correct for the bias created by measurement error and the random variation created by sampling error. Reliabilities of our independent variables were primarily reported as coefficient alpha. To

correct for measurement error, we used Hunter and Schmidt's method (2004) along with the corrections suggested by Schmidt, Le, and Ilies (2003) when dealing with individual differences variables. More information about the variables in our studies and the corrections made will be found below.

Description of the Database

We reviewed both published and unpublished literature from the 1970's through 2012 for articles on personality and negotiations to locate as many studies as possible for this analysis. In addition, we searched for any negotiation articles that reported correlations between cognitive ability and negotiation outcomes. We searched Google Scholar, Web of Knowledge, EBSCO, PsycINFO, and ABInform. Our keyword search included, but was not limited to, these keywords: Big Five, five factor model, FFM, personality, individual differences, cognitive ability, negotiations, and negotiation outcomes. We also searched the Social Science Research Network for working papers or unpublished manuscripts. We reviewed the reference sections of reviews and book chapters on the topic of personality and negotiations to find any studies we overlooked in the electronic searches. Finally, we sent a call for unpublished studies, works in progress, or raw data to both the OB listserv of the Academy of Management and the HR Division listserv. In order to be included, the study had to have measureable negotiation outcomes corresponding to our dependent variables (individual economic gain, joint gain, or integrativeness) correlated with any of the Big Five traits and/or cognitive ability. Studies which lacked these correlations, used unquantifiable dependent variables, or consisted solely of theory or review, were not included. Each of the studies were coded by the first author. We also coded information on the Big Five measure used, its reliability and descriptive statistics, its correlation with several dependent variables (economic gain, joint utility, and integrativeness). We also coded information regarding potential moderators and reliability measures for independent and dependent variables.

To check the reliability of coding, the first and second authors both coded all studies from the sample and we computed percentage agreement between raters for the relevant quantitative data. We had 460 pieces of information for agreement comparison, and found that the two raters agreed on 458 pieces of information, for an agreement rate of 99.6%. The discrepancy between the two raters was based on two miscoded values (one by each rater) which were resolved after discussion. The final database included 14 samples and 148 correlations across 1,920 negotiators or negotiation dyads. Studies included in our meta-analysis are marked with an asterisk in the references section.

Range Restriction and Corrections for Measurement Error

We carefully decided whether we should correct for range restriction in our studies. Range restriction is a statistical artifact of the measurement process. It arises where researchers can only measure data from a restricted population, but wish to generalize results to the general population (Schmidt, Oh, & Le, 2006). Range restriction has the effect of attenuating, or dampening, the reported results of actual relationships. Because of this, effect sizes are often underestimated (Schmidt, et al. 2006). However, using the Hunter-Schmidt meta-analysis procedures, researchers can correct for the effects of range restriction (Schmidt, et al. 2006).

In this study, we are attempting to draw inferences about actual business negotiation behavior. Thus, we were hoping to find studies which sampled actual experienced negotiators, or at least businesspeople for whom negotiation was a part of their job. Unfortunately, the vast majority of negotiations studies are conducted as experiments, often with undergraduate or graduate students. We were only able to locate one article which measured personality and behavior of business negotiators. However, of the student samples, many were at least MBA students, who may have had some work experience. Fulmer & Barry (2004) noted that range restriction can be a problem when measuring cognitive ability with the GMAT exam, because resultant samples are drawn from students already admitted to business schools who are above average in cognitive ability. Because our target population was businesspeople, we made the decision that the samples in our studies, which included primarily businesspeople-in-training (MBA students), did not justify a correction for range-restriction. If our samples had heavy numbers of specialized negotiators (attorneys, contract administrators, etc.) we would have strongly considered a correction for range restriction.

Our correlations of interest are between the personality and cognitive ability variables and negotiations outcome variables. In most cases, reliabilities were reported for the Big Five personality measures as coefficient alpha. One study did not report reliabilities for these measures, and so we conducted a meta-analysis of the remaining studies to determine an appropriate mean value for each of these measures, and used that value. The mean alpha reliabilities reported were as follows: Extraversion = .89, Agreeableness = .79, Conscientiousness = .85, Emotional Stability = .86, and Openness to Experience = .84. These reliabilities were corrected in the meta-analysis for the known overestimation of reliability given by coefficient alpha (Schmidt, Le, & Ilies, 2003). Our cognitive ability measures were taken from the Graduate Management Aptitude Test (GMAT) and the Scholastic Aptitude Test (SAT). There is some debate in the literature about the reliability and validity of these tests. Unreliability in these measures could lead to attenuated relationships being reported between cognitive ability and performance measures in negotiations. Therefore, we used corrections for attenuation based on test reliabilities reported by the test manufacturers. The reliability of the GMAT composite is reported as 0.92. Reliabilities for various subparts of the SAT (but not the composite) are reported, so we performed a meta-analysis of these subparts and found a composite reliability of 0.91 for this test. These values were also corrected for their known overestimation of reliability (Schmidt, Le, & Ilies, 2003). Because no measures of reliability for negotiations outcomes were available, we did not correct for measurement error in any of the dependent variables. We do note that negotiations with the goal of individual economic gains are shorter in duration than joint outcomes negotiations. This may mean that the individual economic gain outcomes reported contain more unreliability in the measure, thereby reducing their correlations with cognitive ability and the Big Five traits. Because we did not correct any of the dependent variables for measurement error, all meta-analytic correlations in Table 1 should be viewed as underestimates.

Certain studies reported more than one dependent variable (e.g. joint utility, integrativeness) that was related to a measure of the negotiators' joint outcomes. Where these constructs were conceptually similar, we combined them into our joint outcomes variable by using the average correlation of the related items from the studies. This was done in order to ensure statistical independence of the meta-analysis. Ideally, we would have computed composite correlations (Hunter & Schmidt, 2004), but interrelations between the component correlations were not reported in the underlying studies.

Results

We made our meta-analytic calculations using the software package developed by Schmidt & Le (2004). In Table 1, we present results for predictor-criterion combinations across a variety of negotiation types and outcomes. We first report results for all negotiation outcomes. Then, as appropriate for our moderator analysis, we report predictor-criterion relationships by subgroups and performed separate meta-analyses for each group (Hunter & Schmidt, 2004). In our Table 1, we report mean observed correlation ($\bar{r}$); mean true score correlations ($\bar{\rho}$); standard deviation of the true score correlation (SD$_\rho$); and the 80% credibility intervals and 95% confidence intervals for the mean true score correlations. When the 95% confidence interval around the true score correlation does not include zero, the mean true correlation is taken to be meaningfully non-zero, whether it be positive or negative. Where 95% confidence intervals do not overlap between subgroups, we assume the presence of a moderator variable. In terms of generalizability, when the 80% credibility interval does not include zero, then we know that 80% of the individual correlations in the population will be nonzero, and we consider the results generalizable to the population.

When we group all negotiations together, there is little support for a relationship between the Big Five traits and negotiation outcomes. The effect sizes are small, and only one of the 95% confidence intervals excludes zero (Emotional Stability; 95% CI: [.05, .11]). Therefore, the results from this part of Table 1 are inconclusive as to whether a relationship exists between the Big Five and negotiation outcomes as a whole. Therefore, Hypothesis 1 was not supported.

Our next finding relates to the effect of cognitive ability on negotiation outcomes. In the first part of Table 1, we find that cognitive ability does have a positive association with negotiation outcomes ($\bar{\rho}$ = .14) with a confidence interval that excludes zero (95% CI: [.05, .25]). The 80% credibility interval, however, does not exclude zero. Therefore, we find that while cognitive ability does appear to have an overall positive effect on all negotiation outcomes in our sample of studies, this result may not be generalizable to the population. Thus, Hypothesis 2 was supported, but we urge caution in interpreting this result.

We next examine whether the relationship between the Big Five and negotiation outcomes is moderated by the goal of the negotiation (individual economic gain, i.e. distributive, versus joint outcomes, i.e. integrative). There are considerable differences in correlations between Big Five traits and negotiation outcomes between the two subgroups. In the first subgroup, individual economic gain, there are weak negative or zero correlations between Agreeableness, Emotional Stability, Openness to Experience and Conscientiousness and outcomes. In each of these cases, the 95% confidence interval excludes zero. Extraversion has a negative correlation with negotiation outcomes ($\bar{\rho}$ = -.17), and its 95% confidence interval also excludes zero. Therefore, in the first subgroup, our results suggest that Agreeableness, Emotional Stability, Openness to Experience, and Conscientiousness do not have a positive relationship with negotiation outcomes where success is measured as individual economic gain. We also found that Extraversion has a negative relationship with individual economic gain in these negotiations. In the second subgroup, in which the goal of the negotiation is a favorable joint outcome, we obtained different results. All of the Big Five traits have a positive association with joint outcomes (Extraversion, $\bar{\rho}$ = .20, Agreeableness, $\bar{\rho}$ = .17, Emotional Stability, $\bar{\rho}$ = .16, Openness to Experience, $\bar{\rho}$ = .18, Conscientiousness, $\bar{\rho}$ = .15), although the 95% confidence intervals for Openness to Experience (95% CI: [.00, .36]) and Conscientiousness (95% CI: [.00, .30]) do include zero. The 80% credibility intervals include zero for Openness to Experience (80% CrI: [-.05, .41]),

Conscientiousness (95% CI: [-.04, .34]), and Extraversion (95% CI: [-.01, .41]) and thus these relationships may not be wholly generalizable. The 95% confidence intervals for Agreeableness, Emotional Stability, Openness to Experience, and Conscientiousness do not overlap between the two subgroups, indicating that the negotiation goal did moderate the relationships. Therefore, Hypothesis 3 was supported.

Table 1: Effects of Personality and Cognitive Ability on Negotiation Outcomes

Variable	*k*	*N*	$\bar{r}$	$\bar{\rho}$	SD_ρ	80% CV_ρ	95% $CI_{\bar{\rho}}$	% Var.
Overall Negotiation Results								
Extraversion	14	1,795	-.03	-.04	.21	-.30,.23	-.15,.07	18.34
Agreeableness	14	1,949	.02	.02	.10	-.11,.16	-.03,.07	47.76
Emotional Stability	8	1,317	.07	.08	.04	.03,.14	.05,.11	81.29
Openness to Experience	8	1,317	.06	.06	.17	-.15,.28	-.06,.18	20.81
Conscientiousness	8	1,317	.06	.07	.12	-.08,.23	-.01,.15	34.59
Cognitive Ability	7	818	.14	.15	.14	-.03,.33	.05,.25	32.11
Individual Economic Gain								
Extraversion	10	1,112	-.16	-.17	.03	-.22,-.13	-.19,.15	89.85
Agreeableness	10	1,266	-.05	-.05	0	-.05,-.05	-.05,-.05	100
Emotional Stability	4	634	0	-.01	0	0,0	-.01,-.01	100
Openness to Experience	4	634	-.05	-.05	0	-.05,-.05	-.05,-.05	100
Conscientiousness	4	634	0	-.01	0	-.01,-.01	-.01,-.01	100
Cognitive Ability	4	551	.06	.06	.04	0,.12	.02,.10	80.87
Joint Outcomes								
Extraversion	4	683	.18	.20	.16	-.01,.41	.04,.36	20.46
Agreeableness	4	683	.15	.17	.11	.03,.31	.06,.28	39.14
Emotional Stability	4	683	.14	.16	0	.16,.16	.16,.16	100
Openness to Experience	4	683	.16	.18	.18	-.05,.41	0,.36	17.58
Conscientiousness	4	683	.13	.15	.15	-.04,.34	0,.3	25.51
Cognitive Ability	3	267	.30	.33	.11	.19,.46	.21,.45	48.89

Note. *k* = number of correlations; *N* = combined sample size; $\bar{r}$ = sample-size weighted mean uncorrected correlation; $\bar{\rho}$ = estimated true-score correlation; CV = credibility interval; CI = confidence interval; %Var = Percent variance in corrected correlations attributable to all artifacts.

Finally, we found that negotiation goal moderates the relationship between cognitive ability and outcomes. Cognitive ability has a strong positive association with negotiation success ($\bar{\rho}$ = .33) when joint outcomes are the measure of success, compared to a weak positive association for individual economic gains ($\bar{\rho}$ = .06). In each case, the 95% confidence intervals excluded zero (95% CI: [.02, .10] for economic gain; .95% CI: [21, .45] for joint outcomes). The 80% credibility interval for joint outcomes also excludes zero (80% CrI: [.19, .46]), indicating this finding is generalizable to the population. Therefore, Hypothesis 4 was supported.

To provide further clarity, we conducted relative weights (RW) analyses (Johnson, 2000) on the joint outcomes criterion. RW analyses provide an estimate of the proportion of the total R^2 accounted for by each predictor in the model. Because the Big Five are moderately to highly correlated with each other (Mount, Barrick, Scullen, & Rounds, 2005), RW analyses provides a better estimate of the relative importance of each trait in relation to each other and to cognitive ability. For the Big Five intercorrelations, we used those meta-analytically derived in Mount, et al. (2005). For the correlations between the Big Five and cognitive ability, we used those derived in Judge, Jackson, Shaw, Scott, & Rich (2007). As shown in Table 2, the Big Five and cognitive ability jointly accounted for 17% of the variance in joint negotiation outcomes, with the Big Five accounting for about 7% of the variance and cognitive ability accounting for about 10% of the variance. In terms of the individual relative weights, only Agreeableness (RW = .014; $\%R^2$ = 8.1%), Openness (RW = .011; $\%R^2$ = 6.5%), Conscientiousness (RW = .012; $\%R^2$ = 7.2%) accounted for over 5% of the explained variance in joint outcomes. In sum, cognitive ability was more strongly related to positive joint negotiation outcomes than the Big Five.

Table 2: Relative Weights Analysis Predicting Joint Outcomes

Variable	RW	$\%R^2$
Extraversion	.024	4.0%
Agreeableness	.014	8.1%
Emotional Stability	.007	4.0%
Openness	.011	6.5%
Conscientiousness	.012	7.2%
Cognitive Ability	.103	60.1%
Total FFM	.068	30.9%
Total R^2	.17	

Note. $\bar{N}$ = 264. Intercorrelations between the FFM are from Mount, Barrick, Scullen, & Rounds (2005). Correlations between cognitive ability and the FFM are from Judge, Jackson, Shaw, Scott, & Rich, 2007. RW = relative weight (Johnson, 2000); %RW: Percentages of relative weights were calculated by dividing individual relative weights (RWs) by their sum (Total R^2) and multiplying by 100. RWs add up to R^2 and %RWs add up to 100%, respectively

Discussion

Our major objective for the meta-analysis was to determine the nature of the relationships between the Big Five personality traits and cognitive ability with negotiation success. One prevailing opinion in existing empirical research and reviews is that good negotiators are "made, not born" (Zartman & Berman, 1983) and that personality and cognitive ability have little effect on negotiating skill. Our results suggest that cognitive ability has an important effect on negotiation success where the goal is a favorable joint outcome for the parties. Agreeableness and Emotional Stability, and possibly Extraversion, also have positive effects on joint outcomes.

The most important finding is that regarding cognitive ability. Our results showed that this ability was more important when the negotiation required consideration of a joint outcome. This supports the theoretical rationale that cognitive ability will become more salient when the situation demands more cognitive processing, as in the case of a more complex negotiation. Cognitive ability did not have a strong effect in negotiations calling only for individual economic gain. One reason could be that these negotiations are shorter, less complex, and require less

learning, adapting, and thinking on one's feet. In these situations, we believe negotiators may not have been stimulated to unleash the potential of their greater cognitive ability. As a practical matter, the business world offers very few zero-sum, individual gain negotiations. More intelligent negotiators should have a significant advantage in real-life negotiations.

Our findings regarding personality traits are also important. In our overall (non-moderated) analysis, there were small correlations for the Big Five traits with negotiation outcomes. In accordance with findings indicating that Extraversion may lead negotiators to anchor their bids early, Extraversion had a negative effect on outcomes in the overall analysis and in the individual economic gain situation. More importantly, when joint outcomes were the goal, Extraversion had a fairly strong positive relationship with outcomes. This makes sense, as the Extraversion trait is more likely to be activated in a more complex, interactive negotiation where the negotiator needs to communicate to determine his or her partner's needs. An extroverted negotiator should be more likely to ask probing questions to uncover interests.

Some authors have theorized, without much evidence, that Agreeableness should be a liability in negotiations. We show that this is not necessarily the case. While Agreeableness has a weak negative effect on outcomes for individual economic gain, it has a stronger positive effect on joint outcomes ($\bar{\rho}$ = .17, 95% CI: [06, .28]). Again, Agreeableness is more likely to be activated in a joint outcome negotiation, and Agreeableness would be useful in successfully conducting a long, complex negotiation while keeping the other party at the table. Emotional Stability is another trait that has been conceptualized as unimportant in negotiations. Our findings in the overall group and the individual economic gains group show a weak positive and weak negative effect, respectively. However, in joint outcomes negotiations, we find that Emotional Stability has a stronger positive effect on success ($\bar{\rho}$ = .16, 95% CI: [16, .16]). We expected to find that Conscientiousness, and possibly Openness to Experience, would have a positive effect on joint outcomes. While we did find positive effects ($\bar{\rho}$ = .15; $\bar{\rho}$ = .18, respectively) the 95% confidence intervals and 80% credibility intervals for each of these included zero. It is possible that additional moderators exist. For example, Fulmer & Barry (2004) suggested that emotional intelligence may help negotiators identify emotions of their negotiating partner, which could interact with Conscientiousness to help negotiators achieve desired outcomes. It is also possible that our small number of studies for these variables (k = 4) was insufficient to test for moderators of these relationships.

Implications for Theory and Practice

This meta-analysis has important implications for the negotiations literature. First, our results contribute to theory development in the stream of research around negotiations by responding to debates in the literature (Klein & Zedeck, 2004). Specifically, we have synthesized the literature to show the relationships between important negotiator characteristics and multiple negotiation outcomes. While doing so, we have highlighted important moderators that merit future research in this literature. Additionally, we have applied trait-activation theory (Tett & Burnett, 2003), a widely-used theoretical perspective (e.g., Li, Liang, & Crant, 2010), to the realm of negotiations.

An entire industry survives on the assumption that great negotiators are made, not born. While we do not dispute the effectiveness of negotiations training and practice, our meta-analysis shows that personality and intelligence are important, too. We take no position on whether an intelligent, extroverted, agreeable, and emotionally stable (but untrained) negotiator is superior to a trained negotiator with lower levels of these positive traits. However, as companies select

employees for negotiation roles, we do advise that they consider selecting more intelligent employees who test higher on Extraversion, Agreeableness, and Emotional Stability. This is good practice on multiple levels, as these employees would likely already be demonstrating higher job performance (Barrick & Mount, 1991; Schmidt 2002), and thus would be good choices to represent the company in negotiations. Also, employees with higher cognitive ability should be able to better learn and apply negotiations training (Colquitt, LePine, & Noe, 2000). Finally, once these employees have been trained and are deployed into negotiations, they should have a meaningful advantage over counterparts from other companies who have not undergone this selection process.

Limitations and Future Research

The present study has its limitations, as do all studies. First, the number of empirical studies available which examined the Big Five traits and cognitive ability on negotiation outcomes is small compared to some other meta-analyses (k = 14). There is no accepted "magic" (Arthur, Bennett, Edens & Bell, 2003) or "minimum" number of studies for a meta-analysis (Rosenthal, 1995). Some methodologies require a minimum of 10 studies (Chetty & Hamilton, 1993), or 5 data points (Arthur, et al. 2003) which our study surpasses. However, it could be argued that the relatively small number of studies creates issues of validity and reliability. However, there are good reasons for the size of our sample, beginning with our stringent inclusion criteria. We intentionally limited our search to articles that explicitly used the Big Five and psychometrically valid measures of cognitive ability (Wonderlic, GMAT, and SAT). These measures, particularly the Big Five, are relatively recently defined constructs. We did find articles from before the 1970s which used different, and less valid, measures of cognitive ability and personality traits. We chose not to force these studies into our analysis. These older measures were so dissimilar that we could not readily adapt them to our measures of the Big Five and cognitive ability. Additionally, we note that our overall sample size of participants is very good (up to 1,949 for certain correlations). We also reported confidence intervals and credibility intervals for each of our effect size measures, and interpreted these findings in the Results section. This allows the reader to make educated decisions concerning the reliability and validity of each finding.

We considered additional reasons that there are relatively few recent empirical studies on personality, cognitive ability, and negotiations. Much of the prevailing literature and many review articles, until now, have stated that the Big Five and intelligence do not play an important role in negotiation success. Therefore, researchers may have been primed to make these findings, or they may have been discouraged from doing new studies on this topic. Also, teaching negotiations is big business, whether at the university level or in private courses. Those who sell negotiation training stand to benefit from the idea that training, rather than personality traits and cognitive ability, matter most in negotiations.

While negotiation training is very important, and no doubt effective in most cases, our meta-analytic results show that personality and cognitive ability also matter in negotiations. Thus, researchers may be motivated to explore the issue further. We have also provided a framework for moderators that may allow researchers to set up appropriate experiments on individual economic gain and joint outcomes. We also call for researchers to utilize samples of more experienced negotiators, such as actual businesspeople. Many companies have a stable of employees familiar with negotiation, in the marketing, sales, and legal departments. There is nothing inherently wrong with a student sample, particularly in a graduate business school, but it

would be helpful to see how these traits affect situations where the negotiators are more familiar with the negotiation process.

Another possible criticism is that, with the exception of the cognitive ability finding, our correlations are considered to be only between "small" and "medium" under Cohen's effect size conventions. However, as Judge & LePine (2007) point out, "the same is true of virtually any meaningful predictor of broad, complex criteria such as job performance" (p. 332). Negotiation success is a broad, complex criterion, as shown by the various dependent variables in our studies which attempt to measure it. We should also be mindful that, as in selection, an incremental advantage in negotiation is directly tied to economic advantages that could be quite large. If a negotiator bargains over billions of dollars during his or her career, and has a "small to medium" advantage due to personality and intelligence, this could translate into millions of dollars of utility to his or her company. If the negotiator engages in high-stakes deals in law or politics, this incremental skill could literally mean the difference between life and death for their constituencies. Therefore, it is misleading to use a purely numerical heuristic without examining the larger context.

In conclusion, we believe our meta-analysis represents an important next step in how businesses should select negotiators. Some negotiators may be born, some may be made. But, if companies can select the best "born" negotiators, and train them to become better, they may be able to claim considerable advantage.

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Appendix 1:
Main Codes and Input Values for the Primary Studies Included in the Meta-Analysis

Source	FFM traits/Cognitive Ability	Negotiation Type	n	r	r_{xx}
Antonioni (1998)	Extraversion	Joint Outcomes	351	0.29	0.78
Antonioni (1998)	Extraversion	Joint Outcomes	120	0.28	0.83
Antonioni (1998)	Agreeableness	Joint Outcomes	351	0.22	0.77
Antonioni (1998)	Agreeableness	Joint Outcomes	120	0.26	0.76
Antonioni (1998)	Emotional Stability	Joint Outcomes	351	0.13	0.85
Antonioni (1998)	Emotional Stability	Joint Outcomes	120	0.16	0.85
Antonioni (1998)	Openness	Joint Outcomes	351	0.31	0.75
Antonioni (1998)	Openness	Joint Outcomes	120	0.17	0.76
Antonioni (1998)	Conscientiousness	Joint Outcomes	351	0.19	0.82
Antonioni (1998)	Conscientiousness	Joint Outcomes	120	0.32	0.84
Barry & Friedman (1998)	Extraversion	Economic Gain	180	-0.26	0.93

Barry & Friedman (1998)	Extraversion	Economic Gain	180	-0.11	0.93
Barry & Friedman (1998)	Extraversion	Joint Outcomes	76	0.025	0.94
Barry & Friedman (1998)	Agreeableness	Economic Gain	180	-0.07	0.87
Barry & Friedman (1998)	Agreeableness	Economic Gain	180	-0.06	0.79
Barry & Friedman (1998)	Agreeableness	Joint Outcomes	76	0.02	0.88
Barry & Friedman (1998)	Emotional Stability	Economic Gain	180	0.07	0.86
Barry & Friedman (1998)	Emotional Stability	Economic Gain	180	-0.04	0.86
Barry & Friedman (1998)	Emotional Stability	Joint Outcomes	76	0.25	0.87
Barry & Friedman (1998)	Openness	Economic Gain	180	0.01	0.86
Barry & Friedman (1998)	Openness	Economic Gain	180	-0.13	0.86
Barry & Friedman (1998)	Openness	Joint Outcomes	76	-0.15	0.86
Barry & Friedman (1998)	Conscientiousness	Economic Gain	180	0.03	0.86
Barry & Friedman (1998)	Conscientiousness	Economic Gain	180	-0.09	0.86
Barry & Friedman (1998)	Conscientiousness	Joint Outcomes	76	-0.05	0.86
Barry & Friedman (1998)	Cognitive Ability	Economic Gain	180	0.09	0.92
Barry & Friedman (1998)	Cognitive Ability	Economic Gain	180	0.02	0.92
Barry & Friedman (1998)	Cognitive Ability	Joint Outcomes	76	0.48	0.92
Dimotakis al. (2012)	Agreeableness	Economic Gain	124	.03	0.72
Dimotakis al. (2012)	Agreeableness	Economic Gain	112	.03	0.72
Graham (1984)	Cognitive Ability	Joint Outcomes	55	.40	.92
Graham (1984)	Cognitive Ability	Economic Gain	55	.30	.92
Kong & Bottom (2010)	Extraversion	Economic Gain	136	-0.06	0.89
Kong & Bottom (2010)	Extraversion	Joint Outcomes	136	-0.09	0.89
Kong & Bottom (2010)	Agreeableness	Economic Gain	136	-0.04	0.79
Kong & Bottom (2010)	Agreeableness	Joint Outcomes	136	-0.04	0.79
Kong & Bottom (2010)	Emotional Stability	Economic Gain	136	-0.01	0.86
Kong & Bottom (2010)	Emotional Stability	Joint Outcomes	136	0.11	0.86
Kong & Bottom (2010)	Openness	Economic Gain	136	0.01	0.84
Kong & Bottom (2010)	Openness	Joint Outcomes	136	-0.04	0.84
Kong & Bottom (2010)	Conscientiousness	Economic Gain	136	0.04	0.85
Kong & Bottom (2010)	Conscientiousness	Joint Outcomes	136	-0.1	0.85
Kong & Bottom (2010)	Cognitive Ability	Economic Gain	136	-0.04	0.91
Kong & Bottom (2010)	Cognitive Ability	Joint Outcomes	136	0.17	0.91
Liu et al. (2005)	Extraversion	EG	95	-.31	0.89
Liu et al. (2005)	Extraversion	EG	105	-.31	0.86
Liu et al. (2005)	Extraversion	EG	95	-.18	0.88
Liu et al. (2005)	Extraversion	EG	101	-.11	0.85
Liu et al. (2005)	Agreeableness	EG	95	-.08	0.82
Liu et al. (2005)	Agreeableness	EG	105	-.08	0.78
Liu et al. (2005)	Agreeableness	EG	95	-.08	0.83
Liu et al. (2005)	Agreeableness	EG	101	-.06	0.79
Ma (2005)	Extraversion	Economic Gain	138	-0.05	0.86
Ma (2005)	Agreeableness	Economic Gain	138	-0.05	0.78
Ma (2005)	Emotional Stability	Economic Gain	138	-0.05	0.85
Ma (2005)	Openness	Economic Gain	138	-0.07	0.8
Ma (2005)	Conscientiousness	Economic Gain	138	0.01	0.82