

On the role of personality, cognitive ability, and emotional intelligence in predicting negotiation outcomes: A meta-analysis

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Abstract

According to a longstanding consensus among researchers, individual differences play a limited role in predicting negotiation outcomes. This consensus stemmed from an early narrative review based on limited data. Testing the validity of this consensus, a meta-analysis of negotiation studies revealed a significant role for a wide range of individual difference variables. Cognitive ability, emotional intelligence, and numerous personality traits demonstrated predictive validity over multiple outcome measures. Relevant criteria included individual economic value, joint economic value, and psychological subjective value for both the negotiator and counterpart. Each of the Big 5 personality traits predicted at least one outcome measure, with the exception of conscientiousness. Characteristics of research design moderated some associations. Field data showed stronger effects than did laboratory studies. The authors conclude that the irrelevance consensus was misguided, and consider implications for theory, education, and practice.

Keywords

negotiations, individual differences, personality, intelligence, cognitive ability, emotional intelligence

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Negotiation determines not merely the terms of economic transactions, but also how colleagues manage their interdependent work, how firms determine business strategy, how partners decide on a division of household chores, how government officials set policy, and how nations conduct diplomacy. Not surprisingly, research on negotiation has actively spanned social, cognitive, and organizational psychology, as well as economics, law, political science, and sociology. This paper examines a question that has loomed large in this field, namely identifying predictors and determinants of negotiator effectiveness.

The earliest social psychological studies of bargaining, dating to the early 1960s, examined a variety of individual difference variables in an effort to find consistent patterns. But a decade later an extensive review of negotiations research concluded that the search was fruitless (Rubin & Brown, 1975). Similar pronouncements have followed periodically ever since, including Thompson's (1990) assessment that "personality and individual differences appear to play a minimal role in determining bargaining behavior" (p. 515), and Bazerman, Curhan, Moore, and Valley's (2000) claim that "simple individual differences offer limited potential for predicting negotiation outcomes" (p. 281). These assertions represent a widely held notion that we call the *irrelevance consensus*. These strong conclusions contradict common wisdom, writing in related areas such as political theory, as well as recent research on managerial performance.

The question of negotiation effectiveness dates back centuries, predating the emergence of modern social scientific research at the beginning of the last century (Ross, 1992, 1993). Experienced negotiators, seeking to guide their superiors and successors, often focused on a constellation of stable individual differences across mental capacity and temperament that they believed were crucial determinants of negotiator effectiveness (Satow, 1917; von Bismarck, 1899). Shortly before the earliest social

psychological experimentation on the subject (Deutsch & Krauss, 1960; Siegel & Fouraker, 1960), the British diplomat Harold Nicolson (1950) stressed the need for careful selection of negotiators because the task requires "certain special qualities" including a foundation of intelligence, knowledge, and prudence along with seven aspects of "moral influence" including "calm" and "good temper" (p. 104). In his treatise on diplomacy, Francois des Callières (1716/1983) advised French royalty to choose negotiators who had not only mental dexterity, but also empathy and social skills. If the irrelevance consensus is correct, then the long-term propagation of diplomatic doctrine represented ill-founded folklore that has been properly refuted by rigorous social science.

We argue that an accurate evaluation of these competing views has far-reaching importance. Within academic research, the question of individual differences is critical for building theories. In the management classroom, students actively seek feedback about their negotiation tendencies and guidance for personal improvement. Outside the university, practitioners and individuals are thirsty for advice about how to improve their negotiation outcomes—often looking to academics to translate research findings for their use (e.g., Babcock & Laschever, 2008; Brett, 2001; Malhotra & Bazerman, 2007; Thompson, 2008; Watkins, 2002). Reconciling, to the extent possible, the centuries-old historical notion of the qualities of the effective negotiator with the decades-old scientific inability to demonstrate a role for individual differences is important for these initiatives.

In the sections that follow, we describe the development and propagation of the irrelevance consensus. We argue that this consensus is paradoxical in light of research demonstrating the predictive power of individual difference variables across a wide range of other organizational settings. After cataloging the major types of negotiations research designs and performance outcomes covered by this quantitative

review, we present theoretical logic that links a wide range of individual difference constructs to these outcomes. The meta-analytic review tests this theoretical logic with fresh eyes towards the relevant data.

The irrelevance consensus and performance paradox

We begin by tracing back the origins of the irrelevance consensus. This notion has become sufficiently well accepted that the most modern reviews and texts on the subject of negotiation make little or no mention of cognitive ability or personality at all (e.g., Brett, 2001; Malhotra & Bazerman, 2007; Thompson, 2006; Thompson, Wang, & Gunia, 2010). On what data does such a strong consensus rely?

Most dismissive treatments on the topic use as their formative source the text authored by Rubin and Brown (1975)—or, following a sociology of citations, they cite work that itself cites Rubin and Brown. For example, Bazerman et al. (2000) referred to prior reviews and texts rather than specific studies. They quoted Pruitt and Carnevale's (1993) assessment that there is a "mixed history" (p. 198) of findings on the topic, Lewicki, Litterer, Minton, and Saunders's (1994) earlier conclusion that "no single personality type or characteristic is directly and consistently linked to success in negotiation" (p. 346), as well as one of the authors' own previous reviews (Bazerman & Neale, 1992). Somewhat surprisingly, underpinning all of these observations is a single original source. Rubin and Brown (1975) has been an authoritative reference, presenting an overview of "more than 1000 different articles and books devoted to the subject [of negotiation] since 1960" (p. viii). Its authors articulated that a "surprisingly large number of experiments... find no systematic relationship between individual difference parameters and bargaining behavior" (p. 195). They were particularly clear about null results in the case of cognitive ability, with the following words originally italicized in the text:

"Intelligence (as measured by various tests of intellectual aptitude) is unrelated to bargaining ability or behavior" (p. 166).

However, Rubin and Brown (1975) based their conclusions on a limited amount of data. In dismissing cognitive ability, the conclusion they emphasized in italics, a closer examination indicates nearly no relevant data at all (Fulmer & Barry, 2004). Five studies were cited but one (Berkowitz, 1968) was inadvertently included. That study actually examined authoritarianism rather than intelligence.¹ Two of the other cited studies included populations of questionable generality—that is, schizophrenic patients in a psychiatric treatment facility (Wallace & Rothaus, 1969) and Czechoslovakian elementary-school children studying under a Marxist regime around the time of a brutal Soviet crackdown (Kubicka, 1968). Of the two studies based on more conventional samples (C. L. Fry, 1965; Love, 1967), one used a coordination game (C. L. Fry, 1965), a type of task lacking most features of a negotiation. Finally, the dominant method used at the time of Rubin and Brown (1975) was narrative review, in contrast with modern methods for quantitative meta-analysis. Taken together, we argue that it is time for the field to stop relying on one source—and on work that cites this source. Breaking from the past, we call for a reevaluation of what we know.

Founded or unfounded, the irrelevance consensus has had a chilling effect on the negotiations field just the same. Many researchers have accepted it and propagated it further, particularly to the extent that the finding was consistent with a prevailing rationalist view. Even those who may not have fully agreed with it, focused their attention elsewhere, for want of finding an interested audience or given resistance from reviewers. Regardless of the reason, research interest in individual differences in negotiation diminished in the wake of Rubin and Brown's (1975) pessimistic review (Neale & Northcraft, 1991). We join a vocal minority of researchers in negotiation seeking a revival of scientific interest in the question (e.g., Barry & Friedman,

1998; Dimotakis, Conlon, & Ilies, 2012; Fulmer & Barry, 2004; Stuhlmacher & Adair, 2011). Such a revival has been fruitful for certain classes of individual difference variables, notably gender (e.g., Stuhlmacher & Walters, 1999), and we attempt to extend the revival to abilities and traits.

The performance paradox

The irrelevance consensus contradicts the most widely replicated, fundamental finding in applied psychology and human resource management. The strong positive association between measures of cognitive ability and job performance is very robust (Rynes, Colbert, & Brown, 2002; Rynes, Giluk, & Brown, 2007). Using meta-analysis, Schmidt and Hunter (1998) reported the validity of general mental ability to be .23 for unskilled work, rising to .51 for jobs of medium complexity and up to .58 for jobs of a professional or managerial nature. In addition, personality measures consistently provide incremental predictive validity in job performance beyond general mental ability. Ones, Viswesvaran, and Schmidt (1993) estimated the validity of integrity at .39. Mount and Barrick (1995) reported the validity coefficient for conscientiousness as .31. Such findings have been replicated in job settings in which negotiation skills should matter, such as with sales representatives (Barrick, Mount, & Strauss, 1993).

As such, the irrelevance consensus implies a conclusion that we call the performance paradox: traits and abilities matter across widely generalizable areas of work life, but just not in negotiation. This possibility seems particularly puzzling because negotiation skills seem inextricably interwoven within job roles across organizational forms and sectors. Resolving this paradox requires one of several conclusions. Perhaps negotiation skill does not actually relate to effectiveness on the job. On a theoretical level, this conclusion is hard to defend, as it would seem to call into question the relevance of the negotiation field of research and teaching

more generally. The most challenging aspects of managerial work have been long theorized to involve the ability to negotiate agreements for high stakes under conditions of uncertainty and the management of contentious disputes among colleagues and subordinates (Gebelein, et al., 2004; Mintzberg, 1973; Neustadt, 1966; Sayles, 1964). If we do not resolve the performance paradox by dismissing the importance of negotiation itself, the two plausible alternatives are that a fundamental result from applied psychology is problematic or that the irrelevance consensus is problematic.

The goal of this paper is to change the conversation, by presenting a new empirical review that can inform the debate better than recycling assertions can. In their own review of the field, Lewicki et al. (1994) argued that “researchers may have closed the book on the effects of individual differences on negotiation prematurely” (p. 348). Others have also called for reappraising the hard data (Barry & Friedman, 1998; Fulmer & Barry, 2004). We attempt to heed this call, reporting the first large-scale meta-analysis of personality, cognitive ability, and emotional intelligence in predicting negotiation outcomes. Given the chilling effect of the irrelevance consensus, the existing body of work is not enormous. Fortunately empirical work never stopped entirely. First, driven by the common wisdom that individual differences are likely to matter, some researchers never fully abandoned the pursuit. Second, individual difference measures have often been used as control variables, even without specific hypotheses. It is further worth noting that the original set of studies reviewed by Rubin and Brown has never been subject to meta-analysis. Thus, from 1960 to the present, a body of work has accumulated that can be examined systematically.

Diversity in outcomes reflects diversity in designs

Before discussing the theoretical logic linking individual difference factors with negotiation

outcomes, we note the diversity of what might be considered an “outcome” of the complex bargaining process. This section describes three major types of negotiations studied, their typical characteristics and, accordingly, what activities are required for high performance. This outline of factors that facilitate successful negotiation is used in the following section, then, as a theoretical foundation to provide reasoning that links these factors to individual difference constructs.

Simple choice games

We start the review with the set of social psychological experiments that includes the prisoner’s dilemma (PD) and other very simple “noncooperative” games. The set includes coordination and public goods problems. In all such studies, participants separately make discrete choices knowing that their payoff will depend on another participant making comparable choices. In the PD each participant receives higher payoffs for choosing to compete with the other party, regardless of what the other party decides, but the highest payoff for the pair as a whole comes from mutual cooperation.

Coordination games lack the conflict of interest of the PD, but they are similar in that each party makes a discrete choice among a limited well-defined set of alternatives. In such games, all information about the payoff structure is typically provided and known to be common knowledge by participants. Without direct communication, there is limited opportunity within the research design for interpersonal dynamics. The key to success is somehow to coordinate action with the counterpart. That problem would be trivial if the participants were not thwarted from talking to each other. The requisite tacit alignment process does not involve the underlying perceived conflict of interest that makes negotiation such a challenging interpersonal process.

We include simple choice games in this review for the sake of comprehensiveness. Historically, these studies were highly represented during early social psychological research on bargaining. They provided most of the evidence from which the irrelevance consensus originated (e.g., C. L. Fry, 1965). For the simple choice studies reviewed next, the dependent measure is the extent of cooperative choices made by the participant. This measure assesses how people choose to behave, rather than that person’s success at reaching a particular goal. Although PD and public goods game choices are simpler and starker than those in negotiation, they still reflect the tension between individual and joint gain known as the *negotiator’s dilemma* (Lax & Sebenius, 1986). Towards formulating theoretical logic to connect this choice with individual difference measures, we note that making cooperative choices typically results from analysis of the payoff matrix in order to understand the optimal outcome, imagining the other party going through the same process, the ability to maintain flexibility, and perhaps the willingness to err on the side of generosity towards an anonymous social partner.

Laboratory studies of negotiation

Over the decades, researchers have developed more complex tasks for studying negotiation in the laboratory. Although these are simplified representations of the kinds of tasks that confront managers and diplomats, they attempt to model more of the real-world features than do simple matrix games. In doing so, participants and their partners have asymmetric information about payoffs and alternatives, the flexibility to communicate, and the ability to set the terms if they choose to reach an agreement.

The simpler class of so-called *distributive* negotiations are primarily competitive. Parties share an interest in reaching a mutually profitable agreement if possible but, because the total profit from any deal is essentially fixed, they

compete for the size of their share. Other than avoiding impasse by reaching a deal, interests are completely opposed. The process resembles haggling over the price of an item at a bazaar. The primary task, to persuade the other party to accept the least favorable terms without walking away, entails effective communication in learning about the other party's willingness to pay, as well as the use of persuasive tactics and logic that encourage the other party to concede their own interests.

The more complex class of *integrative* negotiation tasks incorporate multiple issues that the parties must agree upon, with greater opportunity to create value beyond simply reaching an agreement. The parties' interests over a given issue may be opposed or even completely compatible. In these integrative tasks, the importance of different issues varies sufficiently to enable the possibility of creating joint value, by trading off concessions on issues that are less important in order to receive concessions on those that are more important. Pruitt and Lewis's (1975) negotiation over three issues, in which negotiation partners receive asymmetric information about their interests on multiple issues, has been widely used as a model of integrative bargaining for laboratory research since then. Integrative negotiations typically benefit from thought and effort, considering multiple issues simultaneously, sharing information while seeking information, building trust, problem solving, and avoiding overtly contentious behavior. Taken together, effectiveness in integrative negotiation is enhanced by high aspirations and an underlying concern for the interests of both parties (Follett, 1924; Pruitt & Rubin, 1986; Walton & McKersie, 1965). Given the mixed-motive nature of integrative bargaining, being an effective negotiator simultaneously requires the same persuasion skills valued in distributive bargaining.

The most commonly studied performance measures in laboratory studies have been so-called *economic outcomes* (Thompson, 1990). In the typical designs, participants receive a

payoff chart that maps the particular deal terms onto an objective scoring metric. This "objective" currency is deemed economic whether it consists of dollars, lottery tickets, course credit, or merely abstract "points." Researchers typically distinguish *individual from joint economic value*. Individual economic value, also called *value claimed* (Lax & Sebenius, 1986), is the payoff that an individual negotiator receives, regardless of the distributive or integrative setting of the task. In the case of integrative tasks, *joint economic value*, or value created (Lax & Sebenius, 1986), reflects the extent to which the negotiator's settlement "grew the pie."

Looking beyond economic outcome variables, growing interest over time has focused on psychological performance measures (Bendersky & McGinn, 2010). Large and active research literatures have focused on perceptions of *justice* and *fairness* (Brockner & Wiesenfeld, 1996; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Lind & Tyler, 1988), interpersonal *trust*, *respect*, and *liking* for the counterparty (e.g., Kong, Dirks, & Ferrin, in press; Lewicki, McAllister, & Bies, 1998; Naquin & Paulson, 2003; Pruitt & Rubin, 1986), self-confidence and maintaining face (Sullivan, O'Connor, & Burris, 2006; White, Tynan, Galinsky, & Thompson, 2004), the building of *relational capital* between counterparts as a tangible future resource (Gelfand, Major, Raver, Nishi, & O'Brien, 2006), and subjective beliefs about one's performance regardless of how well one actually performed (Loewenstein, Thompson, & Bazerman, 1989; Messick & Sentis, 1985). Integrating these psychological measures into a unified framework, Curhan, Elfenbein, and Xu (2006) defined *subjective value* (SV) as the "social, perceptual, and emotional consequences of a negotiation" (p. 494), an umbrella term that includes satisfaction with the outcome, justice, fairness, voice, trust, feelings about the self, and the relationship with one's counterpart. SV might be dismissed as a fleeting bias, but it often proves just as important

to negotiators as the economic value at the time of the deal (Blount & Larrick, 2000; Gelfand et al., 2006; Lax & Sebenius, 1986). Empirical work shows tangible performance consequences to high SV in terms of future economic gain, stronger professional relationships for the future, and even job satisfaction among employees (Curhan, Elfenbein, & Kilduff, 2009; Tinsley, O'Connor, & Sullivan, 2002).

Subjective value has two theoretically distinct conceptualizations: the perceptions of the negotiator and the perceptions of the counterpart. Effectiveness in developing one's own SV involves achieving a performance that is satisfying, behaving in a way with which one feels comfortable, and developing a pleasant interpersonal exchange that becomes personally gratifying. This involves an analysis of the negotiation setting to facilitate a positive economic exchange—with the logic that there is spillover from a productive conversation about settlements to a productive interpersonal process. This also involves social skills, such as empathy, self-regulation, positive demeanor, sensitivity to the other party, and the confidence and motivation to persevere during a frequently sticky situation. Factors in cultivating SV range from asking questions to building rapport and seeking richer communication media (Curhan & Brown, 2012). Effectiveness in developing the counterpart's SV, while theoretically distinct, involves many of the same factors for success as developing one's own SV (Curhan & Brown, 2012).

Psychological outcomes were neither well established nor widely studied when the irrelevance consensus began so the book is more open to consider their potential association with individual differences. Rubin and Brown (1975) themselves argued that “the time has come to move such measures . . . out of the dark recess known as ‘supplementary analysis’ back into the forefront of researchers’ attention, where they belong” (p. 297). On a theoretical basis, we note the particular likelihood that enduring individual differences such as personality traits and abilities

will influence the way that we feel and the way that we make others feel. Personality theories were developed in light of the pervasiveness of individual tendencies in shaping our social cognition and interpersonal behavior across a range of settings, and negotiation should surely be among these settings.

Field studies of negotiation

Laboratory studies have been the predominant mode of negotiations research. In those field studies that have been published, the performance measures include self-reports or reports by knowledgeable others such as supervisors who have a meaningful stake in the quality of the work. Fully objective measures of the quality of deals are not available, due to an inability to access the counterparty's information and resolve the asymmetry of information. For the same reason, these studies do not include objective measures of the quality of deals, or measures of the counterpart's SV. Various factors are available that contribute to the outcome measures. Self-reported measures may reflect subjective value for the negotiator. A halo effect with respect to a positive experience can be cast over evaluations of one's tangible performance. Similar factors may influence supervisor ratings with an emphasis on relational capital and perseverance. On-the-job performance can reflect long-term consequences for reputation and relationship quality.

Supervisor-rated performance likely taps the same factors as general job performance, such as cognitive ability and personality traits. Links with generalized job performance might result from a potential halo effect but, more conceptually, the interwoven nature of negotiation skills for accomplishing work tasks. Supervisor-rated outcomes may tap social skills used in developing a positive relationship with one's supervisor, due to the halo effect of liking when subjectively evaluating another person's performance. Although the limited numbers prevent in-depth analysis, our review includes field studies of

negotiation because of their distinctive and potentially informative nature.

Individual difference constructs in negotiation

We strive to be comprehensive in the range of individual difference constructs we review. The general categories include cognitive intelligence, emotional intelligence, the Big Five personality traits, and a collection of additional traits beyond the Big Five, all of which are detailed next. We note that several constructs fall outside the bounds of the review. These include gender and social value orientation which have already been treated in depth through meta-analysis (Stuhlmacher & Walters, 1999; and De Dreu, Weingart, & Kwon, 2000, respectively). Cultural background is also excluded from this review, given its influence beyond the individual level of analysis. In what follows, we outline each individual difference measure included in this review, along with basic theoretical arguments for the possible link between these characteristics and negotiation outcomes.

Cognitive ability. We begin the review with cognitive ability, potentially the most powerful predictor given its consistent associations with job performance overall. General mental ability, also known as “g,” is a broad ability to learn and make sense of familiar and unfamiliar surroundings, to think abstractly, and to devise strategies. It includes capacities for memory encoding and retrieval, cognitive speed, sensory perception, and specific abilities such as math and spelling (Fulmer & Barry, 2004). Because negotiation is a complex decision-making task with a range of alternative sources of action, cognitive skills factor prominently in information-processing approaches (Bazerman & Carroll, 1987). Thus, it is natural to expect such skills to help negotiators, particularly in situations that are novel or complex (Fulmer & Barry, 2004). Highly intelligent individuals

are better able to approach problem-solving tasks, to process and analyze information, and to perform well across a wide variety of occupations (Barry & Friedman, 1998). In spite of the robust association between cognitive ability and job performance, its role in negotiation has been explored relatively rarely. The pervasive influence of Rubin and Brown’s (1975) review may have warded off deeper interest in the topic (Fulmer & Barry, 2004).

Performance on each of the negotiation outcome measures may be affected by a party’s analytical power to understand the goals of the situation and the specifics of how these goals might be reached. Even subjective value for both parties benefits from the spillover of the more positive interpersonal exchange under conditions that focus negotiators on the problem as opposed to the people. That is a fundamental component of advice to the successful negotiator given in the popular book *Getting to Yes* (Fisher, Ury, & Patton, 1991).

Beyond cognitive ability per se, negotiations research has also included the study of cognitive style. *Cognitive complexity*, also known as *integrative complexity*, is a cognitive style in information-processing and decision-making that is defined by two steps: evaluative differentiation, which is the recognition of multiple perspectives and dimensions, and conceptual integration, which is the integration and recognition of the interrelatedness of these multiple dimensions (Suedfeld, Tetlock, & Streufert, 1992; Tetlock, 1988). As a chronic tendency rather than a capability, cognitive complexity appears to be uncorrelated with traditional measures of cognitive intelligence (Fulmer & Barry, 2004; Streufert, Streufert, & Castore, 1968). Individuals who are cognitively complex tend to engage in a wide range of activities relating to approaching negotiations in a sophisticated manner. This includes using a broader range of information for decision-making, generating more alternatives, being more accurate in their predictions, engaging in more flexible trial-and-error activity, and acting more comfortably

in unstructured tasks (Pruitt & Lewis, 1975; Streufert et al., 1968; Tetlock, 1988). As a consequence, they are suited to achieve more beneficial agreements. Given the theoretical distinction vis-à-vis ability, these measures are analyzed separately in the following review.

Emotional intelligence. The construct of *emotional intelligence* (EI) is part of a broadening beyond the boundaries of “g” to examine multiple intelligences (Sternberg, 1997). EI refers to an individual’s ability to appraise and express emotions, to use information generated by emotions, and to regulate their own emotions effectively (Mayer, DiPaolo, & Salovey, 1990). EI has garnered detailed critiques (e.g., Matthews, Zeidner, & Roberts, 2002) covering topics as diverse as conceptual clarity, divergent validity from existing constructs, and scoring difficulties. Psychometric shortcomings, the questionable validity of pencil-and-paper measures, and the theoretical quandary about how to define performance, figure in these critiques. However, there is new evidence that the best existing tests of EI do predict workplace performance, above and beyond the role of cognitive intelligence (Mayer, Roberts, & Barsade, 2008). EI can help negotiators to read their partners’ intentions, keep their own intentions private, maintain the composure of both parties during emotionally charged situations, and persuade counterparts through their effective expression or manipulation of emotion (des Callières, 1716/1983; Fulmer & Barry, 2004; Mueller & Curhan, 2006).

In reviewing the relevant research, we distinguish between the two models that have clashed in the EI field: the *ability model* and the *trait model*. The ability-based model (for a review, see Mayer et al., 2008) focuses on the “correct” answer to performing effectively in situations that require emotion-related processing (Mayer, Salovey, & Caruso, 2002)—and has become the dominant standard in academic research. The other model (see Schutte et al., 1998; Wong & Law, 2002) conceptualizes

emotional intelligence as a trait, correlating with characteristics such as agreeableness, self-monitoring, and the social facets of extraversion. This has been likened to *emotional self-efficacy* (Tett, Fox, & Wang, 2005); it taps into an individual’s confidence, motivation, and prioritization for emotion as much as it does actual ability.

Creativity. Researchers in negotiation have also examined abilities outside of cognitive and emotional intelligence. *Creativity*, defined as generating or perceiving ideas or solutions that are both new and useful (Amabile, 1983), varies meaningfully from person to person. Follett (1924) emphasized the importance of creative thinking for effective conflict management: “Integration involves invention” (p. 33). Creativity involves novel ways to solve problems as well as new combinations of familiar ideas and concepts. This can be an asset in integrative negotiations, in which negotiators need to find solutions that enable both parties to satisfy their underlying interests (Kurtzberg, 1998). Creativity should facilitate the creation of joint economic outcomes while enhancing subjective value for both parties.

Personality traits. The theoretical construct of personality has been defined as consistency over time in a person’s behaviors when that individual is placed again in the same situation (Fleeson, 2004; Mischel & Shoda, 1995). This definition stresses the importance of situations, yet further reflects the way an individual crafts a unique signature of responses to those situations. Arguments are summarized next for potential associations between negotiation performance and the traits that have been examined.

At the center of modern research on personality is the *Big Five model* (Costa & McCrae, 1992)—including the traits *extraversion*, *agreeableness*, *conscientiousness*, *neuroticism*, and *openness*—which emerged from an exhaustive analysis and validation based on colloquial

personality terms (Costa & McCrae, 1992). The Big Five model revolutionized the study of personality with its comprehensive and systematic nature. Prior to its development, researchers tended to focus on individual traits as a disjointed list. At the time of Rubin and Brown's (1975) influential review, the field had not yet converged around this model. Along with its conceptual clarity, the Big Five model enabled construction of a series of valid and reliable measures (Costa & McCrae, 1992; Eysenck, 1992). Given that the five-factor structure of personality has generalized across measures, cultures, and sources of ratings (McCrae & John, 1992), it has proven a particularly useful tool for cumulating results across studies (Barrick & Mount, 1991; Judge, Heller, & Mount, 2002). Although necessarily brief, we provide theoretical arguments that potentially link each trait to negotiation performance.

Attention to the Big Five has not precluded study of other traits. Indeed, Costa and McCrae (1992) facilitated continuity by demonstrating that previous models of personality traits map onto specific traits and subtraits of the Big Five. Ultimately, the Big Five emerged from factor analysis, so these five factors represent larger constellations of more specific individual components. Other traits can be conceptualized as combinations of components within the Big Five. Components and combinations relevant to the negotiation context are discussed in this section while being treated separately in the meta-analysis.

Extraversion represents the tendency to be sociable, dominant, assertive, gregarious, confident, and positive (Costa & McCrae, 1992; Watson & Clark, 1997). Extraverts have more friends and spend more time in social situations than do introverts. Because of their sociable nature such individuals may disclose more information about their own preferences and alternatives to agreement during a negotiation. That tendency could be disadvantageous in a highly competitive context. But these same sociable traits may be an asset for integrative

bargaining that requires more communication and social interaction to reveal hidden trade-offs and compatibilities (Barry & Friedman, 1998). Even so, the assertiveness subcomponent could help negotiators stand their ground (Elfenbein, Curhan, Eisenkraft, Shirako, & Brown, 2010). By contrast, the anxiety that introverts feel during social encounters may lead them to make concessions that enable exit from the situation. Finally, extraversion could facilitate the rapport building needed to establish subjective value for both the self and counterpart.

Positive affect (PA), the tendency to experience positive emotional states frequently, maps onto extraversion in large-scale psychometric testing (Costa & McCrae, 1992), yet is considered distinct on theoretical grounds. Although little negotiations research examines chronic individual differences in PA, theoretical connections can draw from related work on experimentally manipulated positive states. High-PA individuals may achieve higher individual and joint outcomes from greater use of cooperative strategies, fewer contentious strategies, higher goals, greater development of trustful working relationships, more effective exchange of information, and greater confidence (Barry, Fulmer, & van Kleef, 2004; Barry & Oliver, 1996; Carnevale & Isen, 1986; Curhan & Brown, 2012; Forgas, 1998). Those high in PA might perceive greater SV, even controlling for their actual experience. This heightened satisfaction could prove contagious for their counterparts.

The trait *self-monitoring* refers to the tendency to observe other people's expectations and to adjust one's own expressive and instrumental behaviors for the sake of self-presentation (Snyder, 1974). It can be considered part of the extraversion umbrella, which includes inclinations towards social activity, as well as a mix of the emotional intelligence factors of emotion recognition and expression (Briggs, Cheek, & Buss, 1980; Riggio & Friedman, 1982; Snyder, 1974).

Agreeableness is a measure of courteousness, flexibility, sympathy, trust, cooperation, and tolerance. Agreeable people are kind, warm, altruistic, and tend to be both trusting and trustworthy (Costa & McCrae, 1992; John & Srivastava, 1999). They value relationships and avoid conflict (Graziano, Jensen-Cambell, & Hair, 1996). Previous research found agreeable individuals have greater motivation to achieve interpersonal intimacy, which should lead to less assertive tactics in a negotiation setting (Cable & Judge, 2003). Their tendency to be trusting and cooperative might prove constructive for generating SV (Barry & Friedman, 1998). It could even promote the positive negotiation processes needed to achieve economic joint gain. But that success may come at the expense of individual economic outcomes in the face of a competitive counterpart. The trait *relationship orientation* is related to agreeableness.

Conscientiousness is a measure of self-discipline, indicating that individuals are well organized, careful, responsible, and motivated to achieve (Costa & McCrae, 1992; John & Srivastava, 1999). Of the five traits, conscientiousness is the best predictor of overall job performance across a wide array of occupations (Barrick & Mount, 1991). One might expect conscientious negotiators to outperform their less conscientious peers, given their generally greater task achievement and likely thorough preparation for the complex task. In terms of SV, highly conscientious individuals might create an overall negotiation experience that stays focused on the task instead of personal rancor. The trait *need for achievement* is related to the achievement striving dimension of conscientiousness (Costa & McCrae, 1992).

Openness is a measure of imaginativeness, broad-mindedness, and divergent thinking, describing people who are intellectually curious, creative, resourceful, and willing to consider unconventional ideas (Costa & McCrae, 1992; John & Srivastava, 1999). Highly open negotiators might approach the unstructured task with greater flexibility and willingness to pursue

creative strategies towards more integrative deals (Barry & Friedman, 1998). Open negotiators might be less prone to the "fixed pie bias," whereby individuals assume that their counterpart's preferences are diametrically opposed. Their greater flexibility and divergent thinking could help open negotiators to craft better deals for themselves and others. Although a personality trait, openness is related to greater use of intellect (McCrae & Costa, 1997) which could benefit negotiators for the same reasons articulated earlier for cognitive intelligence. The widely used measure *intolerance for ambiguity* represents lower levels of openness.

Neuroticism, the inverse of *emotional stability*, refers to a general level of anxiety, depression, worry, and insecurity (Costa & McCrae, 1992; John & Srivastava, 1999). It involves a greater tendency to experience negative affect such as fear, sadness, guilt, and anger. Neurotics are more anxious, moody, prone to emotional distress, and more sensitive to negative stimuli, such as the stimuli involved with the uncertain process of negotiating. Neurotic negotiators may struggle to engage the task and their relationship partners, to the likely detriment of economic and psychological outcomes.

Just as positive affect maps onto extraversion psychometrically, the construct of *negative affect* (NA) maps onto neuroticism (Costa & McCrae, 1992), though it is often treated as distinct theoretically. NA has been less frequently studied in negotiations than PA. Theoretical perspectives argue that NA interferes with social cognition in reading the other party's interests (Allred, Mallozzi, Matsui, & Raia, 1997). Likewise, those in negative states tend to retaliate against counterparts' competitive behavior even at their own expense (Brown, 1968). Although it is possible to express negative mood strategically to elicit concessions, this tends to create ill will (Carnevale & De Dreu, 2006). However, negative moods may be helpful for enhancing an information processing style that is bottom-up, more systematic and detailed, more narrow and

vigilant in attention, and more focused towards changing one's situation (Clore et al., 1994; Forgas, 2003). Because negative mood signals we are in an unsatisfactory or even dangerous situation, we need deeper information processing with greater causal reasoning (Clore, Schwarz, & Conway, 1994).

Also related to neuroticism are other specific traits examined in negotiation settings. *Maximizing* versus *satisficing* (Schwartz et al., 2002; see also Simon, 1955) has various implications. High-maximizers seek optimal outcomes and are generally less satisfied with their choices than low-maximizers; they are also more prone to regret. Because maximizers tend to spend more time researching their alternatives they are likely to do better, but also to feel worse because they are aware of paths not taken (Iyengar, Wells, & Schwartz, 2006). Although this trait should be a positive influence on economic outcomes, it may be pernicious for psychological outcomes. *Face threat sensitivity* also falls under the umbrella of neuroticism. Individuals high in face threat sensitivity become particularly anxious when negative information might embarrass them, so they are likely to withdraw from negotiations over self-relevant topics (White et al., 2004).

Another personality trait draws from both agreeableness and neuroticism, *unmitigated communion* (Fritz & Helgeson, 1998), which is also called *extreme relational orientation*. Those high in unmitigated communion experience neurotic levels of relationship anxiety. They place others' interests ahead of their own, strain their own needs, and see close relationship partners as dependent on these sacrifices. Amanatullah, Morris, and Curhan (2008) argued that unmitigated communion should lead negotiators to make greater concessions out of concern to avoid straining relationships, reducing both economic and psychological outcomes.

Also related to the Big Five, *risk-taking* is associated with the excitement seeking and activity levels dimensions of extraversion, as well as lower conscientiousness and higher

openness (Witt, Donnellan, & Blonigen, 2009; Yarkoni, 2010). *Locus of control* includes greater self-control and activity (Volkema & Fleck, 2010). These factors map onto components of conscientiousness and the activity dimension within extraversion (Costa & McCrae, 1992).

Other traits have been examined in negotiation which map less clearly onto components of the Big Five model. Christie and Geis (1970) devised a scale of *Machiavellianism* to measure agreement with the strategic ideas espoused by the 16th-century political philosopher Niccolò Machiavelli. High-Machs tend to be pragmatic, opportunistic, maintain emotional distance from others, and believe that the ends justify the means. Willing to manipulate others to achieve their personal goals, they might achieve greater individual economic gain, possibly by sacrificing economic joint gain and psychological outcomes (Barry & Friedman, 1998; Thompson, 1990; however, for opposing arguments see Greenhalgh & Neslin, 1983). High-Machs may be particularly successful when paired with a credulous low-Mach counterpart (W. R. Fry, 1985; Huber & Neale, 1986).

Self-esteem is a matter of holding oneself in highly positive regard (Rosenberg, 1965). Those with high self-esteem may act competitively to gain valued resources, increasing their individual economic outcomes because they believe they are deserving (Hermann & Kogan, 1977). Those with high self-esteem are more prone to self-enhancing biases, tending to judge their negotiation outcomes as more favorable than would those lower in self-esteem, even in the absence of objective differences (Kramer, Newton, & Pommerenke, 1993). Their inflated view may be a hindrance in developing subjective value for their counterparts.

Attitudes. A distinct perspective on individual differences relates to negotiators' attitudes—that is, their expectancies and beliefs about negotiation itself. Expectancies are predictions about behavioral consequences. Predictions

about which actions, for example, are likely to be rewarded or punished (Ames, 2008). Negotiators base their actions not only on their goals, but also on idiosyncratic perceptions about what they expect their actions to accomplish (Ames, 2008). Mischel and Shoda (1995) argued that individual differences can be manifested in consistent patterns of situation-behavior relationships, driven in part by "if... then contingencies" (p. 248). A number of specific negotiation-related attitudes have been the subject of promising recent research.

Negotiation self-efficacy reflects confidence in successfully using various negotiation tactics (Sullivan et al., 2006). *Distributive self-efficacy* refers to tactics such as preventing the other negotiator from exploiting weaknesses and convincing the other party to make concessions. *Integrative self-efficacy* involves confidence in exchanging concessions, finding trade-offs that benefit both parties, establishing a high level of rapport, and looking for agreements that maximize both parties' interests. Such beliefs affect behavior because negotiators base their choices of tactics on their perceived chances of success. That, in turn, guides negotiation process and outcomes (Sullivan et al., 2006). Confidence feeds into higher aspirations and, consequently, better outcomes (Stevens, Bavetta, & Gist, 1993) so distributive self-efficacy and integrative self-efficacy are likely to improve individual and joint gain, respectively. Although both types are likely to improve a negotiator's own subjective experience, the competitive nature of distributive self-efficacy may prove problematic for counterpart satisfaction.

Related to whether one feels confident in pulling off negotiation tactics is the feeling that the whole enterprise is appropriate. *Appropriateness of price negotiation* (Curhan, Elfenbein, & Brown, 2013) assesses the belief that entering into a negotiation is normative. Although these perceptions vary from setting to setting, these beliefs also show chronic individual differences. A survey that spans domains as diverse as flea markets, gas stations, and

department stores achieved conventional levels of interitem reliability (Curhan, 2005). Negotiators with high feelings of appropriateness are likely to feel greater comfort and confidence, which should be a positive factor for their economic and psychological performance (Elfenbein, Curhan, Eisenkraft, Shirako, & Baccaro, 2008).

Negotiators also vary in how ethical they consider particular tactics. From theory, case studies, and interviews with students and executives, R. J. Robinson, Lewicki, and Donahue (2000) developed and validated a five-factor model of various tactics in negotiation: (a) *traditional bargaining tactics*, such as making highly optimistic opening offers and pretending not to be in a hurry; (b) *attacking a counterpart's network*, such as attempts to make a counterpart look weak or foolish in front of their colleagues, or even trying to get them fired; (c) *making false promises* that the negotiator knows will not be honored; (d) *misrepresenting information*, by presenting false information, denying the validity of truthful information, or misrepresenting the progress of a negotiation; and (e) *inappropriate information gathering*, such as paying those who are in a knowledgeable position to reveal information, or cultivating an insincere friendship with the counterpart. As with Machiavellianism, individuals who endorse *ethically questionable tactics*, that is, those tactics falling in categories (b) through (e) may have better economic performance against more credulous counterparts but at some cost in subjective value.

A final type of expectancy reviewed next is a negotiator's *implicit belief* regarding the extent to which negotiation skills are malleable (Kray & Haselhuhn, 2007). This construct derives from literature on conflicts in close relationships (Kammrath & Dweck, 2006). Those who believe that negotiation skills can be developed are more likely to persist in the face of challenge, to the benefit of their economic and subjective performance (Kray & Haselhuhn, 2007).

Overview of the research

The quantitative review compiles into a single source the body of negotiations research addressing the individual difference variables detailed before. We set out to conduct a comprehensive search for all papers that measure cognitive ability, emotional intelligence, personality traits, or negotiation-related attitudes as predictors of economic and psychological outcomes in negotiation. When quantitative analysis indicated inconsistent findings across studies, we attempted to identify moderating factors to explain discrepancies. To do so, we coded factors that varied from study to study in terms of the research design and participant populations. Results are next presented separately across the broad class of studies (simple choice games, laboratory studies of negotiation, and field studies of negotiation). We argue that an updated analysis is long overdue.

Methods

Literature search

Several methods were used to locate the relevant studies:

1. First, we searched for relevant articles in the online databases *PsycINFO*, *PsycARTICLES*, *Web of Science*, *Wiley InterScience*, *ScienceDirect*, *Google Scholar*, and the *Academy of Management Archive* based on appropriate keywords. For papers on intelligence these were “intelligence,” “cognitive ability,” “cognitive intelligence,” “emotional intelligence,” and “cultural intelligence.” For personality, the keywords were “personality,” “Big Five,” “extraversion,” “agreeableness,” “conscientiousness,” “openness to experience,” and “neuroticism,” as well as the varied traits and measures included in Barrick and Mount’s (1991) classification system. Overall, 78 terms relevant to personality traits and 52 terms associated with personality measures
- (e.g., NEO-PI, 16 Personality Factor Questionnaire, or 16 PF) were used for the search. Other individual differences were also incorporated as search terms, including Machiavellianism, locus of control, self-esteem, trait positive affect and negative affect, and negotiation self-efficacy. All individual difference keywords were paired with the terms “negotiation,” “bargaining,” “prisoner’s dilemma,” and “social dilemma.”
2. The reference sections of usable articles found through the first step were checked for additional articles.
3. The Social Science Citation Index was used to check citations for articles that had been found through the other methods.
4. A manual search included journals that are primary outlets for negotiations studies. Those journals were: *Academy of Management Journal*, *Academy of Management Review*, *Administrative Science Quarterly*, *American Economic Review*, *American Journal of Sociology*, *American Sociological Review*, *Industrial and Labor Relations Review*, *International Journal of Conflict Management*, *Journal of Applied Psychology*, *Journal of Experimental Social Psychology*, *Journal of International Business Studies*, *Journal of Management Studies*, *Journal of Organizational Behavior*, *Journal of Personality and Social Psychology*, *Management Science*, *Negotiation and Conflict Management Research*, *Organization Science*, *Personnel Psychology*, *Organizational Behavior and Human Decision Processes*, and *Personality and Social Psychology Bulletin*.
5. Articles were included that were cited in past research reviews.
6. Finally, unpublished manuscripts were solicited in several ways. First, we searched the database *Dissertations and Theses* maintained by Proquest as well as the *Social Science Research Network* database of working papers. Second, a letter was sent to authors of published articles included in the study

requesting any unpublished manuscripts relating to individual differences in bargaining or negotiation. Third, general requests for such manuscripts were circulated via the Internet mailing lists for the Conflict Management and Organizational Behavior divisions of the Academy of Management as well as the International Association for Conflict Management.

This comprehensive process led to the initial identification of 4,934 relevant abstracts and unpublished studies. The vast majority of these papers contained no new empirical data, lacked measurement of individual differences and/or measurement of negotiation outcomes. The papers containing empirical data included simple choice games (284 journal articles and 67 doctoral dissertations), laboratory experiments of negotiation (459 journal articles and 189 doctoral dissertations), field studies with self-reported outcomes (six journal articles and one dissertation), and field studies with supervisor ratings of negotiation effectiveness (one article containing seven studies).

To be included in the meta-analysis, each study had to satisfy three criteria:

1. The studies needed to provide sufficient information to calculate an association between at least one relevant individual difference construct with at least one outcome variable described before. We excluded studies if dependent variables assessed only the negotiation process rather than outcomes (e.g., cooperative behaviors, number of offers, etc.). The exception to this rule was in the case of simple choice games, which examined cooperative behavior.
2. The studies needed to report a correlation coefficient to measure this association, or to provide sufficient descriptive statistics or coefficients that enable the calculation of an equivalent (e.g., Condry, 1967; Leff, 1969; C. Robinson & Wilson, 1965; Shure

& Meeker, 1965; Wahlin, 1967). These alternate analyses involved (a) *F* tests with one degree of freedom in the numerator, for example, in the case of median splits (Rosenthal, 1991; Rosenthal & Rosnow, 1991), (b) chi-square tests with one degree of freedom, and (c) standardized multiple regression beta coefficients, which can be converted to *r* within the range of $-.50$ to $+.50$ (Peterson & Brown, 2005), or can be imputed from additional information about the correlations between study variables (Kenny, 1979).

3. The studies needed to measure natural variation across individuals. Some studies sought to simulate an individual difference by assigning subjects at random to conditions which primed the relevant trait. To focus on naturally occurring variation, these studies were excluded from the analysis. This criterion pertained to a limited number of factors, for example, positive and negative affect (e.g., Carnevale & Isen, 1986), self-esteem (e.g., Pepitone et al., 1967), and implicit negotiation beliefs (Kray & Haselhuhn, 2007).

Coding procedure

Coded variables. We coded primary attributes of the empirical design that were consistently reported across studies. Codes were treated as missing data if a particular article did not provide the information. General variables included for all articles were: (a) year of study, (b) publication status (i.e., published work, unpublished work), (c) type of participant population (i.e., professionals/graduate students, undergraduates, mixed, or other), (d) unit of analysis (i.e., individual, dyadic), (e) number of participants (or dyads), (g) type of individual difference construct (i.e., cognitive intelligence, emotional intelligence, Big Five personality traits, other personality traits), (h) specific measure used to assess the individual difference construct (i.e.,

the test or scale used), (i) type of outcome construct (i.e., points, money, or survey questions), (j) whether the bargainer was negotiating on behalf of oneself or as a representative, and (k) whether or not a performance incentive was provided.

For simple choice games, additional coded variables were: (a) type of game (prisoner's dilemma, public goods, resource dilemma, coordination games, other), (b) number of iterations played, (c) amount of communication allowed between parties (i.e., full communication, restricted communication, offers only, no communication), (d) whether outcomes were recorded as cooperative or competitive behaviors, (e) type of counterpart (i.e., another subject, experimenter confederate, simulated counterpart), (f) if provided, information about the counterpart's individual differences, and (g) strategy of the counterpart (i.e., noncontingent, tit-for-tat, other). Effect size calculations were based on the overall proportion of cooperative versus competitive responses. Opportunistic behaviors were coded as competitiveness. In the case of coordination games, coordinated action was coded as cooperative behavior. To put studies on a consistent metric, cooperative behaviors were coded with a positive sign and competitive behaviors were coded with a negative sign.

For laboratory negotiation studies, additional coded variables were: (a) type of bargaining problem (i.e., buyer/seller, work-related dispute, dividing value, other), (b) type of negotiation outcomes (i.e., economic individual value, economic joint value, psychological subjective value, which included relationship satisfaction, trust, etc.), (c) specific measure used to assess the outcome (i.e., the test or scale used), (d) number of issues to be resolved, (e) whether the bargainer was negotiating on behalf of oneself or as a representative, (f) whether or not there was third-party involvement, (g) type of counterpart (i.e., another subject, experimenter confederate, simulated counterpart), and (h) the integrative potential of the negotiation (i.e., essentially fixed sum, opportunity for joint gain).

On a descriptive level, the outcome variables used in these 191 effect sizes were: economic individual gain (50%), economic joint gain (22%), psychological outcomes for the self (18%), and psychological outcomes for the counterpart (10%).

For field studies, additional coded variables were the particular field setting (i.e., industry or profession) and the measurement source (i.e., self-rating or supervisor rating).

For studies of personality traits, measures were classified according to the coding procedure developed by Barrick and Mount (1991). They derived codes from examination of the measures and decisions made by six expert judges. The Dominance and Sociability scales from the California Psychological Inventory (see Gough, 1988), for example, were classified by experts as measures of extraversion and warmth (reversed-scored), respectively. Scales of suspicion from the 16 PF Inventory were considered reverse-coded measures of agreeableness. Although not part of Barrick and Mount's system, two studies using measures of dispositional optimism were also included because research suggests these measures assess aspects of reverse-coded neuroticism (T. W. Smith, Pope, Rhodewalt, & Poulton, 1989).

A list of all included studies with coding is available upon request as a supplemental report from the authors.

Reliability. The first author and a trained research assistant independently coded each article. Interrater agreement for each variable was assessed with Cohen's kappa, which measures the agreement between two raters who each classify N items into C mutually exclusive categories (J. Cohen, 1960; Fleiss, Cohen, & Everitt, 1969). Kappa values all exceeded .80, with a median of .96. Differences were resolved by discussion between the two coders.

Corrections to effect sizes. In laboratory studies, effect sizes were also corrected for attenuation

due to the unreliability of measurement, using reported alpha values for reliability when available. When studies did not report an estimate of reliability, the average coefficient for similar measures was used as a substitute. Effect sizes for cognitive ability were corrected for range restriction due to selection, using the formulae from Hunter and Schmidt (2004), although this correction did not change any results appreciably.

Multiple results per study. In many studies, multiple effect sizes were reported due to the inclusion of multiple individual difference constructs and/or multiple types of outcome measures. In these cases, statistical independence was maintained through several procedures, so that any given group of participants were included only once in any given analysis. When outcome measures fell into the same category—notably, multiple measures that assessed psychological subjective value—these were aggregated into a single effect size (Barrick & Mount, 1991; Hunter & Schmidt, 2004). This was done by calculating the average after standardization using the Fisher *r-to-Z* statistic, and reverse-standardized after averaging using the Fisher *Z-to-r* statistic (Rosenthal, 1991; Rosenthal & Rubin, 1986). If authors reported an overall value across these measures, that value was used instead. When outcome variables or individual difference measures fell into different distinct categories, these were calculated as separate entries. However, due to their theoretically distinct nature from each other, none of these separate entries were included in the same analysis.

Reports of null results. Some authors reported only that a statistical test yielded null results. In these cases we assumed a value of zero for the effect size to insure a conservative test.

Analytical techniques. The following results were calculated using Microsoft Excel and the MIX software (Bax, 2011) program, following the

algorithms detailed in Rosenthal (1991). Each effect size was weighted as a function of inverse variance (L. D. Cohen & Becker, 2003) enabling the calculation of an optimally weighted corrected mean effect size using Fisher's *Z*, as well as the corresponding 95% confidence interval.

In addition to the average effect sizes, the consistency of effects across studies was calculated, using the *Q* statistic of homogeneity (Hedges & Olkin, 1985; Rosenthal, 1991). When *Q* exceed the critical value, which is based on the distribution of chi-square, it is possible to reject the hypothesis that the various studies are all estimating the same parameter. In the case of categorical values, the statistic Q_b was used to test for between-class effects (Hedges & Olkin, 1985). Recently, the I^2 index has also been accepted as an index of heterogeneity in meta-analysis (Higgins & Thompson, 2002; Higgins, Thompson, Deeks, & Altman, 2003). We repeated all heterogeneity calculations using this statistic and, in each case, results were consistent between I^2 values and *Q*-test results.

The finding of significant heterogeneity can be considered an invitation to search for moderating factors to explain the differences across studies. In such cases, weighted least squares (WLS) linear regression was used to test for the moderating effects of the continuous variables, with each effect size weighted by the reciprocal of its variance so that larger studies had more influence on the calculation (Lipsey & Wilson, 2001). When a sufficient number of articles were available for inclusion, all moderating factors were entered simultaneously, but moderators were examined individually when the number of studies was too small (Hunter & Schmidt, 1990; Lipsey & Wilson, 2001).

Results

Analyses below are reported separately for the three types of studies.

Table 1. Statistical summary of correlation coefficients (r) of individual difference variables with cooperative tendencies in simple choice studies.

Individual differences	Central tendency of effect sizes					Variability in effect sizes		
	k	N	M	p	95% CI	SD	Q_{within}	p
<i>Cognitive ability and style</i>								
Intelligence	5	1,123	.24	<.05	(.18, .29)	.25	13.44	ns
Cognitive complexity	1	48	.29	<.05	–	–	–	–
<i>Big Five personality traits</i>								
Extraversion	5	330	.13	<.05	(.02, .24)	.07	1.09	ns
Agreeableness	4	253	.15	<.05	(.02, .27)	.11	2.18	ns
Openness	4	253	.14	<.05	(.01, .26)	.11	1.91	ns
Conscientiousness	4	253	.02	ns	(–.11, .14)	.10	1.74	ns
Neuroticism	5	330	–.01	ns	(–.12, .10)	.18	7.68	<.05
<i>Interpersonal approach</i>								
Self-monitoring	1	40	.44	<.05	–	–	–	–
Trust	3	134	.28	<.01	(.12, .44)	.02	0.04	ns
Ethical flexibility	1	70	.15	<.01	–	–	–	–
Machiavellianism	7	820	–.18	<.05	(–.25, –.11)	.12	11.70	ns
<i>Expectancies</i>								
Locus of control	2	78	.41	<.01	(.20, .58)	.01	0.01	ns
Intolerance of ambiguity	3	266	.14	<.05	(.02, .25)	.20	6.04	ns
Self-esteem	5	301	.13	<.05	(.01, .24)	.35	14.93	<.05
Need for achievement	3	456	.08	ns	(–.02, .17)	.37	28.68	<.01
Risk-taking propensity	4	295	–.13	<.05	(–.24, –.02)	.19	6.29	ns
<i>Political constructs</i>								
Authoritarianism	6	350	–.18	<.01	(–.28, –.07)	.12	3.14	ns
Internationalism	4	342	.05	ns	(–.06, .16)	.11	1.81	ns

Note. k = number of studies reviewed; N = total number of participants summed across all of the studies; M = average effect size; 95% CI = confidence interval for this effect size; Q_{within} = test for heterogeneity across studies.

Simple choice studies

Table 1 provides a statistical summary of the predictive validity for cooperative tendencies in simple discrete choice games, based on a wide range of individual difference constructs. We clustered the various individual differences into broad categories for the sake of illustration. Most constructs on the list show significant associations with cooperative behavior. This includes (a) the *cognitive ability and style* variables of intelligence ($M = .24$) and cognitive complexity ($M = .29$), (b) the *Big Five personality traits* of extraversion ($M = .13$), agreeableness ($M = .15$), and openness ($M = .14$), (c) the *interpersonal approach* variables

of self-monitoring ($M = .44$), trusting ($M = .28$), ethical flexibility ($M = .15$), and Machiavellianism ($M = –.18$), (d) the *attitude and need variables* of locus of control ($M = .41$), intolerance for ambiguity ($M = .14$), self-esteem ($M = .13$), and risk-taking propensity ($M = –.13$), and (e) the *political* construct of authoritarianism ($M = –.18$).

No significant heterogeneity coefficient justified the search for moderating factors except for neuroticism, self-esteem, and need for achievement. Although none of the coded moderating factors were significant, we note in each of these three cases that the heterogeneity appears to be driven by a single outlier (Faucheux & Moscovici, 1968, Study 1). After

Table 2. Statistical summary of correlation coefficients (*r*) of cognitive ability and emotional intelligence with negotiation outcomes.

Individual differences	Central tendency of effect sizes					Variability in effect sizes		
	k	N	M	p	95% CI	SD	<i>Q</i> _{within}	p
Cognitive intelligence								
Individual economic value	5	862	.07	<.05	(.01, .13)	.21	17.08	<.001
Joint economic value	6	743	.20	<.001	(.12, .26)	.34	23.42	<.001
Subjective psychological value	3	473	.14	<.001	(.05, .22)	.29	3.12	ns
Emotional intelligence								
Individual economic value	3	449	-.15	<.001	(-.24, -.06)	.19	9.82	<.01
Joint economic value	2	273	.02	ns	(-.10, .14)	.10	1.30	ns
Subjective psychological value	5	520	.25	<.001	(.17, .33)	.05	.93	ns

Note. *k* = number of studies reviewed; *N* = total number of participants summed across all of the studies; *M* = average effect size; 95% CI = confidence interval for this effect size; *Q*_{within} = test for heterogeneity across studies.

excluding that study, no significant heterogeneity remains.

Results are consistent whether examining all studies or only those incorporated into Rubin and Brown’s (1975) early influential literature review. Systematic quantitative meta-analysis of this work yielded different conclusions than did the initial narrative review.

Laboratory studies of negotiation

Cognitive ability. The first three columns of Table 2 provide a statistical summary of the predictive validity of cognitive intelligence for negotiation outcomes. These data are also illustrated graphically in the first six columns of Table 1A in the Appendix using stem-and-leaf diagrams, histograms turned onto their side to show the distribution of effect sizes with each value representing a distinct study. These data show a consistent benefit to negotiators from greater cognitive ability for their individual economic value (*M* = .07), joint economic value (*M* = .20), and psychological subjective value (*M* = .14).

Significant heterogeneity appears among the results reported for economic value. In the case of individual value, this appears to result from one outlier (Elfenbein et al., 2008). The results have no remaining heterogeneity after removing this study (*M* = .11, *Q* = 3.70, *ns*). In the

case of joint value, the results varied based on the type of cognitive measure used. As illustrated in Table 1A, the highest values were for objective psychometric tests of cognitive ability, and the lowest for self-reported surveys of cognitive intentions such as cognitive complexity (Pruitt & Lewis, 1975) or perspective-taking ability (Greenhalgh & Neslin, 1983; Neale & Bazerman, 1983). No other coded factors yielded significant tests for moderation.

Emotional intelligence. The fourth and fifth columns of Table 2 provide a statistical summary of the predictive validity of emotional intelligence for negotiation. Appendix Table 1A illustrates these data using stem-and-leaf diagrams in columns 7 and 8. Individuals high in EI achieve lower economic outcomes (*M* = -.15), but higher psychological subjective value (*M* = .25). In the case of economic outcomes, there was significant heterogeneity among the studies. This appears to result from one outlier (Kong, Bottom, & Konczak, 2011). The results have no remaining heterogeneity after removing this study (*M* = -.06, *Q* = 4.49, *ns*).

Big Five personality traits. Table 3 provides a statistical summary of the predictive validity for negotiation outcomes of the Big Five personality traits.

Table 3. Statistical summary of correlation coefficients (r) of the Big Five personality traits with negotiation outcomes.

Individual differences	Central tendency of effect sizes					Variability in effect sizes		
	k	N	M	p	95% CI	SD	Q_{within}	p
Individual economic value								
Extraversion	17	1,930	.02	ns	(-.03, .06)	.16	42.59	<.01
Agreeableness	13	1,407	-.01	ns	(-.07, .04)	.08	5.70	ns
Conscientiousness	9	901	-.03	ns	(-.10, .03)	.19	16.30	<.05
Neuroticism	10	1,101	.01	ns	(-.05, .07)	.09	7.46	ns
Openness	10	1,101	-.01	ns	(-.07, .05)	.11	13.04	ns
Joint economic value								
Extraversion	3	342	.07	ns	(-.04, .17)	.03	0.17	ns
Agreeableness	3	426	.06	ns	(-.04, .15)	.02	0.09	ns
Conscientiousness	2	192	-.05	ns	(-.19, .09)	.05	0.16	ns
Neuroticism	2	192	-.02	ns	(-.16, .12)	.20	2.60	ns
Openness	3	342	.03	ns	(-.08, .14)	.05	0.62	ns
Psychological subjective value for the self								
Extraversion	5	937	.14	<.001	(.07, .20)	.12	9.50	ns
Agreeableness	3	583	.09	<.05	(.01, .17)	.10	3.76	ns
Conscientiousness	2	313	.06	ns	(-.05, .17)	.18	4.71	<.05
Neuroticism	3	513	-.01	ns	(-.10, .08)	.19	10.57	<.01
Openness	3	513	.07	ns	(-.02, .15)	.13	5.31	ns
Psychological subjective value for the counterpart								
Extraversion	2	213	-.14	ns	(-.27, .00)	.23	4.56	<.05
Agreeableness	2	213	.12	ns	(-.01, .26)	.04	0.16	ns
Conscientiousness	1	149	.11	ns	–	–	–	–
Neuroticism	1	149	.04	ns	–	–	–	–
Openness	1	149	.04	ns	–	–	–	–

Note. k = number of studies reviewed; N = total number of participants summed across all of the studies; M = average effect size; 95% CI = confidence interval for this effect size; Q_{within} = test for heterogeneity across studies.

None of the traits predicted individual economic gain or joint gain. However, for individual economic outcome, effects for extraversion and conscientiousness varied significantly across studies. Moderator analyses of extraversion revealed an influence based on the study design. In distributive settings, there was a negative association with individual outcomes ($M = -.15$, $p < .01$). In settings with integrative potential, the association was positive ($M = .09$, $p < .01$). No further heterogeneity remained ($Q = 11.94$, ns and $Q = 9.35$, ns , respectively) when effects were analyzed by type of study design. In the case of conscientiousness, there was significant heterogeneity among effects, which appeared to result from one outlier (Dimotakis

et al., 2012). No further heterogeneity remained after removing it ($Q = 8.69$, ns).

Examining subjective outcomes, both extraversion ($M = .14$) and agreeableness ($M = .09$) predicted greater subjective value for the self. No other Big Five personality traits were significant predictors of SV for the self or counterpart. There was significant heterogeneity for conscientiousness and neuroticism predicting subjective value for the self, and for extraversion in predicting subjective value for the counterpart. However, without sufficient variance on potential factors other than integrative potential, it was not possible to conduct moderation analyses. Few of these studies examined subjective value of the counterpart

Table 4. Statistical summary of correlation coefficients (*r*) of additional individual difference constructs with individual economic negotiation outcomes.

Individual difference	Central tendency of effect sizes					Variability in effect sizes		
	k	N	M	p	95% CI	SD	<i>Q</i> _{within}	p
Personality traits								
Machiavellianism	3	555	-.01	ns	(-.09, .08)	.15	8.76	<.01
Positive affect	1	149	.18	<.05	–	–	–	–
Negative affect	1	149	.00	ns	–	–	–	–
Maximization and regret	1	149	-.01	ns	–	–	–	–
Face threat sensitivity	2	138	.13	ns	(-.04, .30)	.02	0.03	ns
Unmitigated communion	2	134	-.22	<.05	(-.38, -.05)	.27	4.70	ns
Expectancies								
Self-efficacy	5	672	.20	<.01	(.12, .27)	.17	8.44	ns
Appropriateness of price negotiation	1	149	.19	<.05	–	–	–	–
Implicit negotiation beliefs	3	191	.16	<.05	(.02, .30)	.24	1.94	ns
Traditional bargaining tactics	2	911	.07	<.05	(.00, .13)	.09	1.84	ns
Ethically questionable tactics	2	911	.04	ns	(-.03, .10)	.04	0.43	ns
Self-esteem	2	197	.08	ns	(-.06, .22)	.08	0.40	ns
Other								
Creativity	1	149	.05	ns	–	–	–	–
Cognitive complexity	1	149	-.07	ns	–	–	–	–

Note. *k* = number of studies reviewed; *N* = total number of participants summed across all of the studies; *M* = average effect size; 95% CI = confidence interval for this effect size; *Q*_{within} = test for heterogeneity across studies.

(cf. Elfenbein et al., 2008). Supplementary materials, available upon request from the authors, break this down by the particular component of subjective value, for example, justice, trust, satisfaction, relationship quality, etcetera.

Additional personality traits. Other personality traits have been studied in negotiation, as outlined before, some of which were developed specifically for the negotiation context. We report findings even for traits studied only once, for the sake of comprehensiveness. When there was only a single investigation, that paper was White et al. (2004) for face threat sensitivity, and Elfenbein et al. (2008) for all other factors.

Tables 4, 5, and 6 provide a statistical summary of the predictive validity of these additional traits for individual economic outcomes, joint economic outcomes, and psychological outcomes. Only one study reported psychological subjective value for counterparts (Elfenbein

et al., 2008), and so Table 6 provides data only on the SV for the self.

Individual economic value was predicted by higher positive affect (*M* = .18), lower unmitigated communion (*M* = -.22), and higher self-efficacy (*M* = .20). Although Machiavellianism was not a significant predictor (*M* = -.01), significant heterogeneity across studies suggests the value of additional research to identify moderating factors. Joint economic value was predicted by greater self-efficacy (*M* = .12), greater self-esteem (*M* = .10), and greater creativity (*M* = .15). Most of these traits were significant predictors of negotiators' subjective value, most notably positive affect (*M* = .25), lower negative affect (*M* = -.19), lower Machiavellianism (*M* = -.25), unmitigated communion (*M* = .19), self-efficacy (*M* = .17), and self-esteem (*M* = .17). Although there was heterogeneity in the results for unmitigated communion and self-esteem, only two studies for each were found, which precludes testing moderating factors. Supplementary

Table 5. Statistical summary of correlation coefficients (*r*) of additional individual difference constructs with joint economic negotiation outcomes.

Individual difference	Central tendency of effect sizes					Variability in effect sizes		
	k	N	M	p	95% CI	SD	Q_{within}	p
Personality traits								
Machiavellianism	2	237	.04	ns	(-.09, .17)	.09	0.92	ns
Positive affect	1	149	.01	ns	–	–	–	–
Negative affect	1	149	-.12	ns	–	–	–	–
Maximization and regret	1	149	.01	ns	–	–	–	–
Face threat sensitivity	2	168	.30	<.01	(.16, .44)	.24	4.55	<.05
Unmitigated communion	2	304	-.05	ns	(-.16, .07)	.30	9.37	ns
Expectancies								
Self-efficacy	2	313	.12	<.05	(.01, .23)	.05	0.33	ns
Appropriateness of price negotiation	1	149	.08	ns	–	–	–	–
Implicit negotiation beliefs	2	175	.06	ns	(-.09, .21)	.01	0.00	ns
Traditional bargaining tactics	1	149	.03	ns	–	–	–	–
Ethically questionable tactics	1	149	.09	ns	–	–	–	–
Self-esteem	2	383	.10	<.05	(.00, .20)	.02	0.05	ns
Other								
Creativity	2	219	.15	<.05	(.02, .28)	.05	0.19	ns
Cognitive complexity	1	149	.06	ns	–	–	–	–

Note. *k* = number of studies reviewed; *N* = total number of participants summed across all of the studies; *M* = average effect size; 95% CI = confidence interval for this effect size; Q_{within} = test for heterogeneity across studies.

Table 6. Statistical summary of correlation coefficients (*r*) of additional individual difference constructs with the negotiator's psychological subjective value.

Individual difference	Central tendency of effect sizes					Variability in effect sizes		
	k	N	M	p	95% CI	SD	Q_{within}	p
Personality traits								
Machiavellianism	1	149	-.25	<.01	–	–	–	–
Positive affect	1	149	.25	<.01	–	–	–	–
Negative affect	1	149	-.19	<.05	–	–	–	–
Maximization and regret	1	149	-.15	<.10	–	–	–	–
Face threat sensitivity	1	95	.14	<.05	–	–	–	–
Unmitigated communion	2	298	.19	<.01	(.08, .30)	.23	5.19	<.05
Expectancies								
Self-efficacy	3	366	.17	<.01	(.07, .27)	.01	0.03	ns
Appropriateness of price negotiation	1	149	-.03	ns	–	–	–	–
Implicit negotiation beliefs	1	149	.18	<.05	–	–	–	–
Traditional bargaining tactics	1	149	.01	ns	–	–	–	–
Ethically questionable tactics	1	149	-.14	<.10	–	–	–	–
Self-esteem	2	383	.17	<.01	(.07, .27)	.25	10.73	<.05
Other								
Creativity	2	219	.12	ns	(-.02, .25)	.15	1.96	ns
Cognitive complexity	1	149	-.07	ns	–	–	–	–

Note. *k* = number of studies reviewed; *N* = total number of participants summed across all of the studies; *M* = average effect size; 95% CI = confidence interval for this effect size; Q_{within} = test for heterogeneity across studies.

materials available upon request detail these results by particular components of subjective value, for example, justice, trust, satisfaction, relationship quality, etcetera.

Field studies of negotiation

There has been relatively little field research into the role of individual differences in negotiation. In the following lines, we report on this small body of work while distinguishing between criterion variables that were reported by different sources.

Self-reported performance. Table 7 summarizes field studies that examine the association between individual difference measures and self-reported performance. No predictor has been examined by more than two studies and the type of dependent measure varied widely across studies, precluding a formal quantitative analysis. One can see a number of significant findings upon inspection. More intelligent negotiators were better and more satisfied. The strongest associations pertain to performance ratings and the likelihood of initiating negotiations and/or complaining.

Performance ratings from knowledgeable others. An unpublished study used supervisor ratings to examine the associations with Big Five personality traits, across seven samples that ranged from corporate project managers to police officers (Sharma, Elfenbein, & Bottom, 2013). These data, summarized in Table 8, were originally collected by a human resources management consulting firm interested in testing the predictive validity of measurement instruments. The criterion variable reflects experience over time as rated by a primary stakeholder of the negotiation outcomes. Positive predictive validity was found for extraversion ($M = .14$), agreeableness ($M = .15$), and emotional stability ($M = .12$). There was significant heterogeneity across the samples only for conscientiousness. The methodology across these seven samples

was similar, except for the occupation sampled so it appears likely that the effect of conscientiousness may vary based on the type of negotiations conducted in a given job.

Discussion

This comprehensive review reveals the importance of individual differences in predicting negotiation outcomes. The longstanding irrelevance consensus (e.g., Bazerman et al., 2000; Rubin & Brown, 1975; Thompson, 1990) in negotiations research has been a mistake. With one puzzling exception to be discussed next, each of the many individual differences studied had significant predictive validity for at least one outcome measure. The effect sizes were large for some relationships, and modest for others. Unfortunately samples for some promising predictors were quite limited. We speculate that, by suppressing badly needed research over the past several decades, the misguided consensus has held back progress in this field.

Simple choice studies

Although discrete choice in simple games such as the prisoner's dilemma is not a performance outcome per se, narrative review of such tasks formed the basis for the irrelevance consensus. Quantitative estimates of effect sizes revealed that many variables did and still do, in fact, predict cooperative choices. Moderate effects were found for the cognitive constructs of intelligence and cognitive complexity. Large effects were found for self-monitoring, trusting, and locus of control. The discrepancy with the qualitative appraisal of Rubin and Brown (1975) demonstrates the real need for meta-analytic reviews. Their conclusion that the choice effects were null served as the basis for others to advocate forgetting about individual difference effects. The effect sizes for simple choice games were actually stronger in many cases than for negotiations, just as the dichotomous choice to cooperate versus compete is

Table 7. Correlation coefficients (*r*) of individual difference constructs with self-reported negotiation outcomes in field research.

Individual difference	Article	Dependent variable	N	M	p
Emotional intelligence					
	Pulido-Martos et al. (2013)	Obtaining positive results	123	.18	<.05
	Pulido-Martos et al. (2013)	Power balance	123	.13	ns
	Pulido-Martos et al. (2013)	Constructive climate	123	.12	ns
	Pulido-Martos et al. (2013)	Procedural flexibility	123	.09	ns
	Sharma (2007, Sample 1)	Ability to negotiate effectively	108	.32	<.01
	Sharma (2007, Sample 2)	Ability to negotiate effectively	100	.40	<.01
Extraversion					
	Harris & Mowen (2001)	Bargaining proneness	128	.11	ns
	Harris & Mowen (2001)	Complaint propensity	128	.22	<.10
	Harris & Mowen (2001)	Bargaining intention	128	-.04	ns
	Harris & Mowen (2001)	Complaint intention	128	.04	ns
	Pulido-Martos et al. (2013)	Obtaining positive results	123	.10	ns
	Pulido-Martos et al. (2013)	Power balance	123	.21	<.05
	Pulido-Martos et al. (2013)	Constructive climate	123	.01	ns
	Pulido-Martos et al. (2013)	Procedural flexibility	123	.11	ns
Neuroticism					
	Harris & Mowen (2001)	Bargaining proneness	128	.11	ns
	Harris & Mowen (2001)	Complaint propensity	128	-.20	<.10
	Harris & Mowen (2001)	Bargaining intention	128	-.03	ns
	Harris & Mowen (2001)	Complaint intention	128	.11	ns
	Pulido-Martos et al. (2013)	Obtaining positive results	123	.04	ns
	Pulido-Martos et al. (2013)	Power balance	123	.06	ns
	Pulido-Martos et al. (2013)	Constructive climate	123	-.28	<.01
	Pulido-Martos et al. (2013)	Procedural flexibility	123	-.30	<.01
Agreeableness					
	Harris & Mowen (2001)	Bargaining proneness	128	.14	ns
	Harris & Mowen (2001)	Complaint propensity	128	-.15	ns
	Harris & Mowen (2001)	Bargaining intention	128	-.08	ns
	Harris & Mowen (2001)	Complaint intention	128	-.06	ns
	Pulido-Martos et al. (2013)	Obtaining positive results	123	.25	<.01
	Pulido-Martos et al. (2013)	Power balance	123	.10	ns
	Pulido-Martos et al. (2013)	Constructive climate	123	-.12	<.05
	Pulido-Martos et al. (2013)	Procedural flexibility	123	-.05	ns
Openness to experience					
	Harris & Mowen (2001)	Bargaining proneness	128	.22	<.10
	Harris & Mowen (2001)	Complaint propensity	128	.16	ns
	Harris & Mowen (2001)	Bargaining intention	128	-.02	ns
	Harris & Mowen (2001)	Complaint intention	128	.13	ns
Conscientiousness					
	Harris & Mowen (2001)	Bargaining proneness	128	.02	ns
	Harris & Mowen (2001)	Complaint propensity	128	.22	<.10
	Harris & Mowen (2001)	Bargaining intention	128	.02	ns
	Harris & Mowen (2001)	Complaint intention	128	.06	ns
Machiavellianism					
	Volkema & Fleck (2010)	Propensity to initiate negotiations	86	.23	<.05
	Volkema & Fleck (2010)	Intentions for assertive negotiation	86	-.06	ns
	Volkema et al. (2013)	Propensity to initiate negotiations	115	.11	ns

(continued)

Table 7. (continued)

Individual difference	Article	Dependent variable	N	M	p
Self-efficacy	Volkema & Fleck (2010)	Propensity to initiate negotiations	86	.32	<.01
	Volkema & Fleck (2010)	Intentions for assertive negotiation	86	.22	<.05
	Volkema et al. (2013)	Propensity to initiate negotiations	115	.25	<.01
Positive affect	Curhan et al. (2009)	Economic value	70	.05	ns
	Curhan et al. (2009)	Subjective value	70	.41	<.01
Negative affect	Curhan et al. (2009)	Economic value	70	.01	ns
	Curhan et al. (2009)	Subjective value	70	-.39	<.01
Relationship orientation	Miller et al. (2010)	Integrative bargaining used	84	.33	<.01
	Miller et al. (2010)	Integrative bargaining intent	84	.25	<.05
	Miller et al. (2010)	Preference for integrative bargaining	84	.24	<.05
Risk propensity	Volkema & Fleck (2010)	Propensity to initiate negotiations	86	.29	<.01
	Volkema & Fleck (2010)	Intentions for assertive negotiation	86	.12	ns
	Volkema et al. (2013)	Propensity to initiate negotiations	115	.17	<.10
Locus of control	Volkema & Fleck (2010)	Propensity to initiate negotiations	86	.07	ns
	Volkema & Fleck (2010)	Intentions for assertive negotiation	86	.18	ns
Maximization and regret	lyengar et al. (2006)	Outcome satisfaction	548	-.27	<.01

starker in many ways than the more complex outcomes in negotiation studies. Individual differences clearly predict one of the simple building blocks on which more complicated negotiation behaviors are based.

Laboratory studies of negotiation

Cognitive intelligence was a strong predictor of outcomes on the more complex tasks now studied by negotiators researchers. Fulmer and Barry (2004) anticipated this link on theoretical grounds, and the results substantiate their claim. Negotiators with greater emotional intelligence (EI) may not necessarily realize immediate benefits in the terms of the agreements that are reached in laboratory studies. But even the more complex laboratory tasks fail to consider the importance of long-term deal implementation and noncontracted forms of social exchange in determining the economic consequences of negotiated agreement (Mislin,

Campagna, & Bottom, 2011). Negotiators with greater EI do generate enhanced social psychological outcomes such as satisfaction, liking, trust, and intentions to work again with the other party in the future. As such, they are likely to create substantial long-term economic value through this investment in relational capital (Gelfand et al., 2006). If so, then EI may be an even better predictor of negotiator effectiveness than cognitive ability. That was the claim made long ago by the French diplomat des Callières (1716/1983). As we discuss at greater length next, negotiations researchers need to begin examining tasks that incorporate implementation behavior and longer term social exchange.

Each of the Big Five personality traits predicted negotiation performance—with the puzzling exception of conscientiousness. Field research on negotiation, in which supervisors with real stakes in the negotiation outcomes provided performance ratings, was comparatively rare. The positive findings for these limited

Table 8. Statistical summary of correlation coefficients (r) of individual difference constructs with supervisor-rated negotiation performance.

Individual difference	Central tendency of effect sizes					Variability in effect sizes		
	k	N	M	p	95% CI	SD	Q_{within}	p
Extraversion	7	647	.14	<.001	(.06, .21)	0.15	7.79	ns
Agreeableness	7	647	.15	<.001	(.07, .23)	0.19	12.47	ns
Conscientiousness	7	647	.06	ns	(-.02, .14)	0.24	13.07	<.05
Emotional stability	7	647	.12	<.01	(.04, .20)	0.23	12.20	ns
Openness	7	647	.07	ns	(-.01, .15)	0.10	2.20	ns

Note. k = number of studies reviewed; N = total number of participants summed across all of the studies; M = average effect size; 95% CI = confidence interval for this effect size; Q_{within} = test for heterogeneity across studies.

data suggest a source for the common intuition that personality matters in negotiation. In laboratory work, extraversion harmed performance in simple distributive tasks, but helped in the more complex integrative tasks (Barry & Friedman, 1998) that better reflect the reality of complex working relationships with long-term interdependence across multiple issues. One-shot deals that focus on a single issue with no concerns about compliance are the exception rather than the norm in modern organizational life.

The level of analysis also mattered. The extent to which traits influenced economic outcomes and subjective value varied for the individual and the dyad. At the gestalt level, our findings suggest that negotiators in complex integrative settings should seek out partners with strong capabilities, who can better create joint value for the benefit of the pair. In simpler distributive settings, they should seek out partners who are more extraverted and neurotic. They tend to share more information and to concede more readily in order to exit an uncomfortable situation.

The type of outcome variable also mattered. Some traits that had little to no predictive power for economic outcomes, such as agreeableness in the case of laboratory studies, predicted a more positive negotiation experience. This association matters to the negotiator. Subjective perceptions are not merely a consolation prize in the event of poor economic outcomes. Newer empirical research and theorizing emphasizes their role in

developing long-term negotiation value (Curhan et al., 2009; Gelfand et al., 2006).

Field studies of negotiation

The few field studies of negotiation most often examined self-reported performance. These results largely replicated the effects found for negotiation studies and psychological outcomes, which is consistent with the possibility that self-reported negotiation performance taps into satisfaction as much as objective gains. In the one set of studies that avoided self-report measures, supervisor ratings were predicted by greater extraversion, agreeableness, and emotional stability.

Given the results presented before, the irrelevance consensus can be properly retired. The long-standing belief in the field that individual differences do not matter for negotiation performance (see, e.g., Bazerman et al., 2000) was misconceived. Unfortunately that conclusion relied for too long on one early narrative review and other papers that cited it. We do not wish to solely blame Rubin and Brown (1975) for the durability of a false consensus. The section on individual differences represented just one aspect of their multifaceted literature review. In other respects their work has proven to be an invaluable resource, "a rich source of hypotheses" (Fitch, 1976, p. 266). Acknowledging serious limitations in the study designs up to that date, they expressed

confidence that future researchers would address those problems. Further, meta-analysis was not common practice at the time and so they relied on the more traditional method of narrative review. Their errors of interpretation reflect the basic limitations of qualitative review. Fault rests to a great extent with the broader field of researchers, including for example, the authorship team of this paper (e.g., Bottom, Holloway, Miller, Mislin, & Whitford, 2006), who have neglected over time to critically analyze the evidence and test the assertions. Rubin and Brown (1975) themselves would surely be surprised that their conclusions were reified and stood essentially unchallenged for decades.

That said, we do note that Rubin and Brown (1975) chose unduly bold and conclusive language to interpret the results of a small number of mismatched studies. Those choices left an unfortunate impression that surely contributed to chilling consequences. Although it is tempting to draw the most provocative conclusions from evidence at hand, researchers need to exercise care in distinguishing between results and wider speculation.

The irrelevance consensus both reflected and further sharpened divisions between what Cronbach (1957) deemed the two disciplines of scientific psychology. Experiments to establish universal principles of cause and effect in negotiation supplanted and eventually suppressed correlational studies of individual differences. Cronbach explained how these disciplines actually represent complementary approaches that should facilitate a more complete understanding of complex processes. We speculate that the far-reaching propagation of Rubin and Brown's (1975) conclusion resulted in part from its fit with the a priori beliefs of researchers working in the dominant experimental negotiations paradigm.

The performance paradox, which is our term for the disparity between conclusions in negotiations research and applied psychology, hinged less on fact than on fault lines between the two disciplines. The meta-analysis here revealed that negotiation performance is actually predicted,

for the most part, by the same individual differences that have proven to be reliable predictors of managerial performance across industries and level of responsibility (e.g., Mount & Barrick, 1995; Rynes et al., 2007; Schmidt & Hunter, 1998). The paradox is resolved with the finding that the irrelevance consensus was unfounded.

These divisions in the psychological science of negotiation present a rich irony. The founders of the behavioral research paradigm were a broad coalition of business leaders, government officials, and scholars, who were inspired to establish the paradigm during the 1920s after the high stakes failed negotiation process to end World War I (Bottom, 2010). They worked to build an interdisciplinary empirical social science grounded in biology and psychology that would generate a sounder basis for policy making and conflict management than the traditional reliance on intuition, folklore, and armchair theorizing that had clearly failed them in 1919. Despite successes during the interwar period, these founders feared that disciplinary divisions in the sciences, and the interests of the professional associations, could ultimately undermine their best efforts to develop the interdisciplinary science needed to accomplish this (see Moulton, 1930; Ruml, 1930). Unfortunately, those fears ultimately proved to be well founded (Bottom & Kong, 2012). Even within psychology the experimental and correlational disciplines have splintered,² and so the wider ambitions for multilevel integration across biology, psychology, anthropology, sociology, economics, and political science remain elusive. With the recent resurgence of interest in the behavioral approach in economics and finance, some integration of the two disciplines of psychology would be timely.

The lessons of the irrelevance consensus should serve as a warning and provide a motivation for integration within and across disciplines. The mistaken consensus demonstrated that rigorous empirical researchers can wrongly convince themselves, even for many years, that they have disproven theories derived from

nonscientific observation in other areas, such as the rich literature on diplomacy. Providing sound policy guidance requires an interdisciplinary science that can stand up to the complexity of the problems.

A modified performance paradox: Conscientiousness

Surprisingly, given its strong predictive power elsewhere for job performance (Mount & Barrick, 1995), the personality trait conscientiousness showed no associations with any of the outcome variables studied in either field or laboratory settings. We note that, in many cases, conscientiousness had significant heterogeneity, but the variability in designs did not facilitate testing moderating factors formally. We also note, in the case of laboratory studies, that the typical design constrains much of the constructive behavior that conscientiousness may predict. Conscientious participants in laboratory negotiations have no greater opportunity to prepare, given that they are handed the relevant background materials with a limited amount of time, and they cannot conduct independent research beyond the information given. Most research was conducted in university settings, in which conscientiousness levels may have a more restricted range. These factors would not account for the lack of predictive validity in the field research, in which one field study did find heterogeneity of effect sizes. Another possible explanation might relate to the diversity of constructs within the larger constellation of conscientiousness. Recalling that the Big Five model emerged from the factor analysis of many more specific traits, it is possible that traits within the conscientiousness umbrella could counteract each other. Perhaps conscientious negotiators do more to prepare, but their achievement striving could work to the detriment of an effective process. We suggest that more research on conscientiousness would be valuable to help resolve this new performance paradox.

Limitations and future work

Any meta-analysis is limited to the body of existing work available for inclusion. The final data set here was relatively small, which we attribute to the effect of early pessimistic research reviews. The final data set was also relatively homogeneous in the approaches that researchers tended to take. Most work took place in university settings, with psychology or management students who completed measures as part of their coursework and laboratory designs that typically sampled undergraduate populations. The findings need to be qualified for the amount and type of research available for inclusion. The findings also need to be qualified in terms of their magnitude, as effects were modest in some cases, and sizeable in others. The findings presented before also represent only naturally occurring variation in individual differences, not experimental manipulations.³

A meta-analysis provides a snapshot not only of what the field has but also what it does not. To find productive avenues of new research, a simple glance at the tables reveals that many types of studies were represented by tiny numbers of papers. Conducting additional work in these more limited areas will be productive for future theoretical development. For example, additional research can identify the moderating factors responsible for heterogeneity—notably, those cases in which there were single outliers. Beyond normal sampling and other idiosyncrasies, these outliers have the potential to reveal theoretical distinctions vis-à-vis what has come before. It is noteworthy that many of these studies identified in the previous lines as outliers are among the most recent (Dimotakis et al., 2012; Elfenbein et al., 2008; Kong et al., 2011). Newer research may be taking the field in revealing directions.

Beyond mere numbers, the limitations of the existing body of work suggest specific areas that would be productive for future work: (a) Increase the amount of field research. The most

face-valid designs showed the strongest associations among economic performance and the Big Five personality traits, presumably because they sampled from behaviors over time, in a context that is more flexible for traits to shape behavior, and with the greater range in individual differences that one finds outside of university settings. Even laboratory studies that sample participants outside of university students would be a major step forward to limit problems of restriction-of-range on factors such as cognitive ability, conscientiousness, and openness to experience. (b) Incorporate greater realism into laboratory designs. Most laboratory studies force participants into negotiating, realizing they are negotiating, and doing so with a particular partner. Designs could be developed with alternatives to negotiation and the room to select partners. This can address recent findings of individual differences in the likelihood to initiate negotiations, with women having a lower propensity (Babcock, Gelfand, Small, & Stayn, 2006). (c) Study negotiation outcomes over time. The influence of individual differences may emerge as their effect accumulates, whether with the same partner or through reputations carried over to different partners. In particular, relational capital may feed back into economic capital over time (Gelfand et al., 2006), and past experiences may develop a sense of anticipatory justice that colors future experiences⁴ (Shapiro & Kirkman, 2001). The opportunity to examine implementation and postdeal compliance may provide greater room to reveal personality influences. On a more mundane level, studying negotiations over time provides multiple measures of outcome variables—it is noteworthy that the field typically uses the equivalent of a single-item measure of performance, which reduces reliability. (d) Most studies of psychological outcomes focused on the SV of the negotiator, rather than the SV of the counterpart. More work on partners' experiences would be worthwhile and represent a theoretical departure from the bulk of existing research. (e) Negotiations research on a variety of topics should include individual

difference factors as control measures. This will increase the precision for researchers to find their effects of interest, by reducing noise, and will also increase the body of work available for meta-analysts to examine individual differences. (f) Researchers should continue the recent trend to examine negotiation-specific individual differences. In general, the closer the match of a personality trait to a domain, the better its predictive power, and the domain-specific traits measured in negotiation were not exceptions. To date, most work has examined traits that were imported elsewhere from psychology, and the newer trend is a welcome change. (g) Researchers should examine the interactions among multiple individual difference constructs. The work examined main effects, but interaction terms may be influential on outcomes, and no such work was available for inclusion. Perhaps, for example, cognitive ability amplifies the benefit of emotional intelligence for negotiation performance, as it does for job performance more generally (Côté & Miners, 2006).

Practical implications

Negotiations researchers regularly translate their findings to help practitioners negotiate better agreements. Accurately understanding the determinants of negotiation outcomes is vital to theory, education, and practice.

One practical implication is the importance of division-of-labor and person–job fit. Some theorists have gone so far as to say that, even if there were positive findings about individual differences in negotiation, it is unethical to put this knowledge to practical use because you cannot do anything about them (Bazerman & Carroll, 1987). However, negotiators can use self-awareness about their strengths and weaknesses to select themselves into settings in which they are likely to succeed. In some cases, this may mean deferring specific work tasks to a colleague or agent who has a greater likelihood of negotiation success. That can be as easy to implement as bringing a friend or family

member to the car dealership. Teammates regularly divide tasks based on individuals' skills and interests, providing checks and balances for each other. Individuals can self-select into some types of negotiations but not others. An extrovert may defer to colleagues in strictly distributive negotiations while actively seeking out integrative settings.

For tasks that require negotiation and dispute resolution skills, the profile of relevant attributes must be fully understood. Doing so can address Bendersky and McGinn's (2010) conclusion that negotiations research has had much too limited an impact on the wider field of organization science. Developing multilevel theories of negotiation in hierarchical organizations requires modeling the decisions of owners and managers to assign work to individuals. This meta-analysis indicates that multiple forms of intelligence as well as distinct features of personality are likely to be part of this set. Owners and managers strive to assign employees to the roles for which they are most qualified. For these reasons, many educators and practitioners have, despite the irrelevance consensus, continued to provide just this type of feedback to their students and clients in professional development and job selection.

We also argue for the practical importance of these results in considering whom to seek out as a counterparty. Personality is about our behaviors, but also about individual differences in the situations that we seek (Gross, 2001; Mischel & Shoda, 1995). Effective negotiators should look for appropriate counterparts based on a set of factors that include their traits and abilities.

Finally, we suggest the possibility that effective negotiators may inherit some of the attributes that determine their capability. Extensive evidence documents that aspects of intelligence, personality, and other traits have some genetic basis (Plomin, DeFries, McClearn, & McGuffin, 2008). Personality is at least moderately stable across the lifespan (Mischel & Shoda, 1995). Recent evidence for a positive association between twin siblings in their negotiation

performance (Elfenbein, Eisenkraft, DiLalla, Curhan, & Perlis, 2012) further supports the possibility of a genetic role. But just as individual differences are partly genetic, they are also influenced by our idiosyncratic environments (Plomin et al., 2008). Further, personality traits are ultimately patterns of behavior (Fleeson, 2004), and preferred ways of being (Costa & McCrae, 1992; Mischel & Shoda, 1995). We can be trained to expand our behavioral repertoire when properly motivated. Developing greater confidence from in-class practice can increase self-efficacy. Likewise, learning that other people see a specific negotiation opportunity as appropriate can inspire a reappraisal (Babcock & Laschever, 2008). This insight can emphasize some of the mechanisms for the well-documented benefit of training negotiators.³ Any genetic or deeply ingrained environmental variation in intelligence or temperament does not generally reduce educators' focus on developing such skills. The same should be true for the apparent role of stable individual differences in negotiation.

Conclusion: A new dawn for individual differences

It is time to retire the irrelevance consensus and recognize the potentially far-reaching role of individual differences in predicting negotiation outcomes. With one notable exception, all individual difference constructs studied exhibited predictive validity for at least one kind of outcome variable. The insights gained by stepping back from argumentation and focusing on the data should inspire negotiations researchers to study these variables across widely varying contexts, both in the laboratory and the field. If it does, future reviews should be able to draw much clearer and more refined conclusions about what factors determine negotiation outcomes. Then, negotiation theory can truly become an integral part of a multilevel, behavioral organization science.

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Notes

1. Berkowitz (1968) did mention in the Discussion section that a previous study had found no association between authoritarianism and cognitive ability, which could be the source of the erroneous reference.
2. Another irony here is that Louis Thurstone, the psychologist recruited to advance the behavioral agenda, devised both the multiple factor analytic approach to abilities and personality traits (Thurstone, 1947) as well as the mathematical psychology of judgment and choice that became "behavioral decision theory" (Thurstone, 1927). His followers and the followers of his followers generated the schism that led behavioral decision theory approaches to negotiation to supplant rather than complement investigation of individual differences.
3. We thank an anonymous reviewer for this point.
4. We thank an anonymous reviewer for this point.

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APPENDIX

Table 1A. Stem and leaf plots of correlation coefficients (*r*) of cognitive ability and emotional intelligence with negotiation outcomes.

		Cognitive ability						Emotional intelligence									
		Economic joint value															
		Economic individual value		Overall		Psychometric tests		Cognitive characteristics		Psychological subjective value		Economic individual value		Economic joint value		Psychological subjective value	
Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf
-.5		-.5		-.5		-.5		-.5		-.5		-.5		-.5		-.5	
-.4		-.4		-.4		-.4		-.4		-.4		-.4		-.4		-.4	
-.3		-.3		-.3		-.3		-.3		-.3		-.3	2	-.3		-.3	
-.2	1	-.2	1	-.2		-.2		-.2		-.2		-.2		-.2		-.2	
-.1		-.1		-.1		-.1		-.1		-.1		-.1	8	-.1		-.1	
-.0		-.0		-.0		-.0		-.0		-.0		-.0		-.0	6	-.0	
.0	022	.0	79	.0	01	.0	01	.0	01	.0	3	.0	4	.0	8	.0	
.1	7	.1	2	.1		.1		.1		.1	5	.1		.1		.1	
.2	1	.2	7	.2	6	.2	6	.2	2	.2	4	.2		.2		.2	0489
.3		.3		.3	0	.3	0	.3	3	.3	3	.3		.3		.3	1
.4		.4		.4	0	.4	0	.4	4	.4	4	.4		.4		.4	
.5		.5		.5	0	.5	0	.5	5	.5	5	.5		.5		.5	

Note. An effect size of zero in italics indicated that the authors reported that a result was nonsignificant without providing the coefficient.

Table 2A. Stem and leaf plots of correlation coefficients (*r*) of Big Five personality traits with economic value.

Overall		Economic individual value										Economic joint value																																			
		EXTRAV					AGREE					CONSC					NEUROT					OPEN																									
		Distributive		Integrative			Stem		Leaf			Stem		Leaf			Stem		Leaf			Stem		Leaf																							
Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf												
-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5								
-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4							
-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3							
-.2	0367	-.2	0367	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2							
-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2	-.1	2						
-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0	-.0	0				
.0	17999	.0	99	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179	.0	179				
.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447	.1	2333447		
.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2	.2	2		
.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3	.3	3
.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4	.4	4
.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5	.5	5

Note: EXTRAV = extraversion; AGREE = agreeableness; CONSC = conscientiousness; NEUROT = neuroticism; OPEN = openness. Values of zero appearing in italics indicate that authors reported that they tested the coefficient and found that it was nonsignificant, but did not report the effect size.

Table 3A. Stem and leaf plots of correlation coefficients (*r*) of Big Five personality traits with psychological subjective value.

Psychological subjective value for the self			Psychological subjective value for the counterpart																
EXTRAV		AGREE		CONSC		NEUROT		OPEN		EXTRAV		AGREE		CONSC		NEUROT		OPEN	
Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf	Stem	Leaf
-.5		-.5		-.5		-.5		-.5		-.5		-.5		-.5		-.5		-.5	
-.4		-.4		-.4		-.4		-.4		-.4		-.4		-.4		-.4		-.4	
-.3		-.3		-.3		-.3		-.3		-.3	5	-.3		-.3		-.3		-.3	
-.2		-.2		-.2	3	-.2		-.2		-.2		-.2		-.2		-.2		-.2	
-.1		-.1		-.1		-.1		-.1		-.1		-.1		-.1		-.1		-.1	
-.0 6		-.0		-.0		-.0	7	-.0		-.0	4	-.0		-.0	4	-.0		-.0	6
.0		.0	28	.0		.0	6	.0		.0		.0		.0		.0	4	.0	
.1 67		.1		.1	19	.1	1	.1		.1		.1	17	.1		.1		.1	
.2 7		.2	2	.2		.2		.2		.2		.2		.2		.2		.2	
.3		.3		.3		.3		.3		.3		.3		.3		.3		.3	
.4 2		.4		.4		.4		.4		.4		.4		.4		.4		.4	
.5		.5		.5		.5		.5		.5		.5		.5		.5		.5	

Note. EXTRAV = extraversion; AGREE = agreeableness; CONSC = conscientiousness; NEUROT = neuroticism; OPEN = openness. Values of zero appearing in italics indicate that authors reported that they tested the coefficient and found that it was nonsignificant, but did not report the effect size.