

Examining the Impact of *Culture's Consequences*: A Three-Decade, Multilevel, Meta-Analytic Review of Hofstede's Cultural Value Dimensions

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Using data from 598 studies representing over 200,000 individuals, we meta-analyzed the relationship between G. Hofstede's (1980a) original 4 cultural value dimensions and a variety of organizationally relevant outcomes. First, values predict outcomes with similar strength (with an overall absolute weighted effect size of $\rho = 0.18$) at the individual level of analysis. Second, the predictive power of the cultural values was significantly lower than that of personality traits and demographics for certain outcomes (e.g., job performance, absenteeism, turnover) but was significantly higher for others (e.g., organizational commitment, identification, citizenship behavior, team-related attitudes, feedback seeking). Third, cultural values were most strongly related to emotions, followed by attitudes, then behaviors, and finally job performance. Fourth, cultural values were more strongly related to outcomes for managers (rather than students) and for older, male, and more educated respondents. Fifth, findings were stronger for primary, rather than secondary, data. Finally, we provide support for M. Gelfand, L. H. Nishii, and J. L. Raver's (2006) conceptualization of societal tightness-looseness, finding significantly stronger effects in culturally tighter, rather than looser, countries.

Keywords: Hofstede, national culture, cultural values, meta-analysis

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Thirty years ago, Geert Hofstede (1980a) published his groundbreaking book on cross-cultural differences, *Culture's Consequences: International Differences in Work-Related Values*. The original book and the subsequent update, entitled *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations* (Hofstede, 2001), have inspired thousands of empirical studies of Hofstede's cultural value dimensions. Recently, Kirkman, Lowe, and Gibson (2006) qualitatively reviewed almost 200 empirical studies that used Hofstede's dimensions and were published in 40 journals and book series between 1980 and 2002. In addition, two other recent qualitative reviews of the cross-cultural organizational behavior and psychology fields covering the last decade have shown that Hofstede-inspired empirical research is increasing exponentially (Gelfand, Erez, & Aycan, 2007; Tsui, Nifadkar, & Ou, 2007).

Conspicuously absent from these recent qualitative reviews is an attempt to provide a more quantitative examination of the empirical research using Hofstede's cultural value dimensions. An exception is Oyserman, Coon, and Kimmelmeier's (2002) meta-analytic review of individualism–collectivism, a cultural value dimension appearing in Hofstede's (1980a) work as well as many other cultural value frameworks (e.g., House, Hanges, Javidan, Dorfman, & Gupta, 2004; Maznevski, DiStefano, Gomez, Noorderhaven, & Wu, 2002). Oyserman et al. included 83 studies of individualism–collectivism published between 1980 and 2000 in their review. Their purpose in this work, however, limits the broader conclusions that can be drawn about Hofstede-inspired research. For example, Oyserman et al. limited their review to studies of individualism–collectivism, thereby omitting Hofstede's other major cultural value dimensions (i.e., power distance, uncertainty avoidance, and masculinity–femininity). In addition, their main objective in the review was to determine whether European Americans were more individualistic and less collectivistic than people in other societies. Although this is an interesting research question, it does not address the impact of individualism–collectivism on important organizational outcomes. Oyserman et al. did include outcomes such as self-concept, well-being, cognition, and relationality but not other organizationally relevant outcomes, such as job performance, absenteeism, turnover, motivation, or leadership. Finally, Oyserman et al.'s meta-analytic review was published over eight years ago and was based on a data set containing studies published up to 2000 (83 studies total). This

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means that the large volume of research on individualism–collectivism published over the last decade has gone unexplored.

In light of these limitations, here we examine, on the basis of a meta-analysis of 598 studies, relationships between Hofstede's (1980a) cultural value dimensions and outcomes that are highly relevant to organizations. Thus, we attempt to make several contributions. First, our meta-analysis builds upon previous qualitative work by Kirkman et al. (2006), who "took note of a general trend of relatively low amounts of variance explained by the cultural values" (p. 313). However, this assertion was based on their review of a wide variety of studies examining cultural values and various outcomes at different levels of analysis. Our study allows for a more fine-grained, multilevel, quantitative approach to assessing the predictive power of the cultural value dimensions that takes into account the specific cultural value and type of criterion variable (e.g., emotions, attitudes and perceptions, behaviors, job performance).

Second, although individualism–collectivism has received the bulk of attention from cross-cultural researchers, it is not known if this value has stronger predictive power than the other values. Because the authors of cross-cultural reviews have encouraged researchers to move beyond individualism–collectivism (Gelfand et al., 2007; Kirkman et al., 2006; Tsui et al., 2007), assessing the relative predictive power of all of the values could help researchers with their choice to include other theoretically supported values. Similarly, at the individual level of analysis, not much is known about the predictive power of cultural values compared to other predictors such as personality traits, general mental ability, or demographic characteristics. Our meta-analysis compared cultural value effects with those of other possible predictors of employee outcomes. If cultural values explain amounts of variance for outcomes such as job performance or organizational commitment similar to the amounts for these other frequently used predictors, researchers may be more motivated to include cultural values in addition to measures of personality or intelligence when attempting to predict important employee outcomes.

Finally, this study also examined theoretically important moderators of cultural value main effects. We examined the extent to which effect sizes are influenced by the nature of the sample (e.g., organization vs. student samples, demographics), the use of primary data (e.g., survey) versus secondary data (e.g., archival country scores), and one nation-level factor (i.e., cultural tightness–looseness; Gelfand, Nishii, & Raver, 2006). Thus, beyond determining effect sizes for the cultural values, a major purpose in this study was to determine when cultural values matter most, a question of great importance to both scholars and practitioners (Gibson, Maznevski, & Kirkman, 2009). It is likely that cultural values have much stronger effects under certain conditions than others (Kirkman et al., 2006). Establishing the boundary conditions for cultural value effects should (a) allow researchers to better understand and interpret their study findings and (b) help practitioners to determine the conditions under which cultural values are likely to have more meaningful influences on organizationally relevant outcomes. Examining moderators also helps us respond to Gelfand et al. (2007), who concluded, "research in cross-cultural OB [organizational behavior] still focuses largely on cultural main effects and ignores situational factors as . . . moderators" (p. 482).

A Brief Review of Hofstede's Cultural Value Dimensions

Hofstede (1980a, p. 25) defined culture as "the collective programming of the mind which distinguishes the members of one human group from another." He developed his cultural value framework with data from about 116,000 morale surveys completed by 88,000 IBM employees living in 72 countries and regions (reduced to 40 countries that had more than 50 responses each) and speaking 20 languages in the late 1960s and early 1970s. Country-level factor analytic results allowed him to classify the represented countries along four dimensions. The influence of the IBM study on subsequent understanding of culture is hard to overestimate. Virtually all later models of culture include Hofstede's dimensions and have conformed to his approach (for reviews, see Taras, Rowney, & Steel, 2009; Taras & Steel, 2009). For example, although he has a competing framework, Trompenaars (1993, p. iii) acknowledged Hofstede "for opening management's eyes to the importance of the [cross-cultural management] subject."

The first dimension, *individualism–collectivism*, is defined as "the degree to which people in a country prefer to act as individuals rather than as members of groups" (Hofstede, 1994, p. 6). Individualism is "a loosely knit social framework in which people are supposed to take care of themselves and of their immediate families only," and collectivism "is characterized by a tight social framework in which people distinguish between ingroups and outgroups, they expect their ingroup to look after them, and in exchange for that they feel they owe absolute loyalty to it" (Hofstede, 1980b, p. 45).

Subsequent research on the construct suggested that individualism and collectivism may be two independent dimensions (e.g., Markus & Kitayama, 1991). Other models split each of the facets into vertical and horizontal subdimensions (e.g., Singelis, Triandis, Bhawuk, & Gelfand, 1995). To maintain consistency with Hofstede's (1980a) original model of culture, we have treated individualism and collectivism as extremes of a single dimension. Our methodology section provides more details on how we handled the challenge of coding studies that differentiated between horizontal and vertical facets of individualism–collectivism or treated the two as independent constructs.

The second dimension is *power distance*, defined as "the extent to which a society accepts the fact that power in institutions and organizations is distributed unequally" (Hofstede, 1980b, p. 45). Alternatively, it is the extent to which subordinates are not expected to express disagreement with their supervisors and supervisors are not expected to consult with their subordinates in the decision-making process (Hofstede, 1980a, 2001). There is very little variation in how power distance was defined in subsequent research, and most cultural value measurement instruments are highly consistent with Hofstede's operationalization.

Third, *uncertainty avoidance* is defined as "the extent to which a society feels threatened by uncertain and ambiguous situations and tries to avoid these situations by providing greater career stability, establishing more formal rules, not tolerating deviant ideas and behaviors, and believing in absolute truths and the attainment of expertise" (Hofstede, 1980b, p. 45). Uncertainty avoidance should not be confused with risk avoidance, as "it does not describe one's willingness to take or avoid risk, but rather is

associated with preferences for clear rules and guidance" (Hofstede, 2001, p. 149).

The fourth dimension is *masculinity–femininity*, with masculinity defined as "the extent to which the dominant values in society are 'masculine'—that is, assertiveness, the acquisition of money and things" (Hofstede, 1980b, p. 46) and femininity defined as the opposite of masculinity, that is, dominance of feminine values such as preference for "friendly atmosphere, position security, physical conditions, [and] cooperation" (Hofstede, 2001, p. 281). In other words, masculinity is "the degree to which values like assertiveness, performance, success and competition . . . prevail over values like the quality of life, maintaining warm personal relationships, care for the weak, and solidarity" (Hofstede, 1994, p. 6).

Michael Harris Bond (Chinese Culture Connection, 1987) and later Hofstede and Bond (1988) developed a fifth dimension, *Confucian dynamism* (a.k.a. long- vs. short-term orientation). Long-term orientation refers to future-oriented values such as persistence and thrift, and short-term orientation refers to past- and present-oriented values such as respect for tradition and fulfilling social obligations. We were unable to include Confucian dynamism in our meta-analytic examination due to the lack of empirical research on the topic.

Research Questions and Hypotheses

Given the proliferation of Hofstede-inspired empirical research over the last three decades, one can imagine an almost limitless list of research questions and hypotheses to explore in a meta-analytic fashion. To narrow down these possibilities, we attempted to address several theoretically compelling questions presented in two research questions and several formal hypotheses below. We organize our review into two parts. First, we deal with issues involving the predictive power of cultural value dimensions' main effects, including potential differences in the predictive power of the four dimensions in general, across all studies and levels and as determined by general groupings of outcome variables (i.e., emotions, attitudes and perceptions, behaviors, and job performance). Second, we explore potential moderators or boundary conditions of cultural value main effects including (a) demographics, (b) data source, and (c) cultural tightness–looseness. By identifying the various factors affecting the predictive power of cultural value main effects, we may be able to better explain some of the mixed findings in previous research (Gelfand et al., 2007; Tsui et al., 2007). In addition, we may be able to qualify Kirkman et al.'s (2006) assertion that cultural values typically explain only small amounts of variance in main effect studies. We turn now to a theoretical discussion of the predictive power of the main effects of the cultural value dimensions.

The Predictive Power of Cultural Values as Main Effects

There has been a long history in the behavioral sciences of examining the main effects of values, in general, on outcomes such as attitudes and behaviors (Homer & Kahle, 1988). Thus, we wish to complement this stream of research by meta-analytically examining main effects of cultural values, specifically. We first discuss possible main effect differences based on specific cultural values, the relative predictive power of cultural values compared to other

frequently used predictors of employee outcomes, and differences based on specific outcome variables.

Specific cultural value. Hofstede (1980a) included four cultural value dimensions in his original framework, allowing for a more comprehensive multidimensional evaluation of effect of culture. However, all of the recent reviews of the cross-cultural organizational behavior and psychology literature have concluded that there has been an overreliance on individualism–collectivism compared to Hofstede's other value dimensions (Gelfand et al., 2007; Tsui et al., 2007). Such an overreliance might lead researchers to conclude that individualism–collectivism has stronger predictive power than the other dimensions in empirical research. On the other hand, qualitative (Earley & Gibson, 1998) and quantitative (Oyserman et al., 2002) reviews of individualism–collectivism identified a number of problems related to the definition and conceptualization of the construct, leading Earley and Gibson (1998, p. 296) to (a) conclude that "measurement problems stem from the fuzziness of its domain and definition" and (b) call for a moratorium on individualism–collectivism research (clearly unheeded). *Ceteris paribus*, unreliability could lead to lower predictive power of individualism–collectivism compared to that of other cultural values (Rosenthal, Rosnow, & Rubin, 2000; Rosnow & Rosenthal, 1996), which have indeed demonstrated higher reliabilities (Kirkman et al., 2006). In any case, there is no compelling theoretical reason why some of the cultural value dimensions should have stronger predictive power than others, particularly when looking across all levels and all outcomes. Due to the lack of compelling theory and existing quantitative attention to all of the cultural values simultaneously, we make no a priori assumptions about their relative predictive power. Thus, rather than present a formal hypothesis, we ask the following research question:

Research Question 1: Do significant differences exist in the overall predictive power of individualism–collectivism, power distance, uncertainty avoidance, and masculinity–femininity?

Predictive power for organizationally relevant outcomes compared to other individual-level predictors. Another important question is how strongly individual-level outcomes are predicted by cultural values compared to other frequently examined predictors, such as personality traits, general mental ability, and demographics. A challenging aspect of our meta-analysis is that Hofstede's (1980a) cultural value dimensions have been empirically linked to a widely disparate array of individual-level outcomes. It was necessary to group outcomes together in order to draw meaningful conclusions with regard to comparing effect sizes with other individual-level predictors. When grouping our outcome variables, we relied on existing frameworks found in comprehensive reviews of the organizational behavior and psychology literatures (e.g., Ilgen & Klein, 1989; Rousseau, 1997). Using this existing literature as a guide, we were able to categorize criteria into five broad outcome categories (with 83 specific types of outcomes within these five categories), including emotions (e.g., both the tendency to display emotions and emotions experienced, such as anxiety, depression, and embarrassment); attitudes and perceptions (e.g., organizational commitment, job satisfaction, organizational identification, leadership style preferences, preference for teamwork); behaviors (e.g., organizational citizenship behav-

iors, turnover, absenteeism, effort, innovation, communication behavior, conflict management handling behaviors); traits (e.g., the Big Five, locus of control, self-efficacy, self-esteem); and job performance. Note that, due to the relative stability of individual traits compared to the other categories of outcomes and the fact that we compare the predictive power of cultural values to personality, we do not include traits to avoid tautological issues. Alternative classification schemes are clearly possible, but we believe our categorization provides a parsimonious, theoretically supported way to examine the effects of cultural values on important groups of organizationally relevant outcomes. There has been no comprehensive quantitative review of the Hofstede-inspired research, so the predictive power of the cultural values compared to other individual attributes remains an open issue. Thus, we present the following research question:

Research Question 2: Do cultural values have significantly different predictive power than other individual-level predictors (i.e., personality traits, general mental ability, and demographics) on organizationally relevant outcomes (i.e., emotions, attitudes and perceptions, behaviors, and job performance)?

Outcome variables. Existing theory regarding the impact of values can inform specific predictions about the relative predictive power of Hofstede's cultural values with respect to our general outcome classification scheme discussed above (i.e., emotions, attitudes and perceptions, behaviors, and job performance). One criterion for determining relative predictive power is assessing how closely matched the bandwidth is between predictors and criteria (Campbell, 1990). Broadband predictors assess global criteria better than specific criteria and vice versa. As predictors, values are generally considered broad tendencies (Rokeach, 1973). Thus, we argue that cultural values should be relatively stronger predictors of broader criteria, such as emotions, rather than more specific criteria, such as attitudes and perceptions, behaviors, or job performance. When assessing how strongly values can predict these more specific criteria, those researching the value–attitude–behavior hierarchy have argued that values are more proximally related to attitudes and perceptions and more distally related to behaviors (Homer & Kahle, 1988). Thus, we expected that cultural values would be more strongly related to attitudes and perceptions than to behaviors. Finally, we argue that job performance is the predictor most distal from cultural values. In fact, the overall direct relationship between cultural values and performance may be close to zero, as previous research has shown that it may be fully mediated by the fit between cultural values and management practices (e.g., Newman & Nollen, 1996). Thus, we predicted

Hypothesis 1: The predictive power of individualism–collectivism, power distance, uncertainty avoidance, and masculinity–femininity will be the strongest for emotions, followed by attitudes and perceptions, then behaviors, and finally job performance.

Moderators of Cultural Value Main Effects

As we discussed in our introduction, examination of potential moderators of cultural value main effects can help to determine

when cultural values matter most (Gibson et al., 2009). Researchers have theoretically surmised (Kirkman et al., 2006; Leung, Bhagat, Buchan, Erez, & Gibson, 2005) but never comprehensively tested the notion that cultural values may have stronger effects under certain conditions than others. To have both research and practical implications, moderator analyses should specify the conditions under which cultural values are likely to have more meaningful influences on organizationally relevant outcomes. We first describe the potential moderating effects of respondent demographic characteristics (i.e., age, nature of the sample, sex, education level), followed by data source (i.e., the use of primary vs. secondary data), and then cultural tightness–looseness.

Demographics. Because almost all studies that incorporate measures of Hofstede's (1980a) cultural value dimensions also include measures of sample demographic characteristics, existing research presents excellent opportunities for examining demographic attributes as moderators of cultural value effects (Kirkman et al., 2006). Moderating effects could be tested only at the individual level of analysis due to data availability. First, we argue that the predictive power of the cultural values will be stronger for older, rather than younger, respondents. Our argument is rooted in the concept of *traitedness* (Allport, 1937). *Traited individuals* are those who have internalized or identify themselves with a given trait. Those people who possess a strong internal representation of a trait tend to act more consistently with it across diverse situations, increasing the strength of the trait's relationship with behaviors or espoused beliefs (Britt, 1993); in other words, they know who they are. As Church (2000) noted, applying the notion of *traitedness* specifically to culture, those "being less sensitive to situational cues and more guided in their behavior by internal dispositions would be relatively 'traited' in their behavior and show greater behavioral consistency across trait-relevant situations" (p. 660). Consequently, higher *traitedness* increases the predictive power of a certain trait, as "the strength and the relevance of a particular trait to the person *moderates the correlation* [emphasis added] between scores on a given scale and relevant behavior" (Britt, 1993, p. 554). It is important to understand that *traitedness* does not change one's scores on a trait but means that one is more likely to respond in consonance with one's traits.

Research has shown that younger, rather than older, people are on average less *traited* and that their values are more malleable and have a weaker effect on behavior and attitudes (Baumeister, 1997; Brandtstaedter & Greve, 1994; Coleman, Ivani-Chalian, & Robinson, 1999). As *traitedness* increases with age, values start playing a more important role, and variation in attitudinal and behavioral responses associated with a particular trait decreases. This assumption is also supported by numerous studies on acculturation that have consistently shown that cultural values of younger people are much more malleable than those of older individuals (e.g., Ouarasse & van de Vijver, 2005; Taras, 2008b). As people age, their *traitedness* with respect to cultural values increases and is expressed in more consistent behavioral and attitudinal reactions to certain stimuli. Thus, we predicted

Hypothesis 2a: The predictive power of individualism–collectivism, power distance, uncertainty avoidance, and masculinity–femininity will be significantly stronger for older, rather than younger, respondents.

Regarding the nature of the sample (i.e., managers/employees vs. students), we argue that the effects of cultural values will be stronger for organizational respondents, rather than students, for several reasons. First, students are likely to be younger than organizational employees. As just explained, younger people tend to display a lower level of internalization of cultural values and a greater within-group dispersion of scores; thus, their scores on a particular value (either low or high) correlate more weakly with corresponding outcomes. Second, working managers and employees are typically members of business organizations, which are reflections of the cultural norms of each society. Compared to students, managers and employees are more closely involved in organizational and societal life and more frequently faced with situations in which they have to make choices about their behavioral and attitudinal reactions to different stimuli. The high frequency of reacting to pertinent stimuli forces people to adapt by developing certain behavioral and attitudinal patterns that best match their core values. The need to make those important choices more frequently crystallizes behavioral and attitudinal response patterns increasing traitedness and thereby improves trait associations. Moreover, compared to students, managers typically make choices with more important consequences, leading to stronger adoption of behavioral and attitudinal styles. This further diminishes uncertainty and variability in the type of responses and strengthens the link between cultural values and responses. As more standardized responses are learned over time, the within-group variation of scores decreases, thereby increasing the predictive power of the construct. Thus, we predicted

Hypothesis 2b: The predictive power of individualism–collectivism, power distance, uncertainty avoidance, and masculinity–femininity will be significantly stronger for managers and employees, rather than for students.

Regarding the sex of the respondents, we argue that the predictive power of the cultural values will be stronger for men, rather than women, for several reasons. First, Cross and Madson (1997) proposed that one of the most basic sex differences is in the self-concept: Women are more likely than men to develop an interdependent or relational self-construal, whereas men are more likely than women to develop an independent or agentic self-construal. Thus, women's behavior is more likely to be driven by the maintenance of relationships than by strict adherence to individual cultural values (cf. Lee, Pillutla, & Law, 2000). Further, Gilligan (1982) argued that women's identities are defined more by contextual and relational concerns, whereas men's identities are defined more by abstract, rule-based, individual processes in accordance with cultural norms. Although women may be more flexible with regard to their cultural values in order to maintain relationships, men will likely view relationships as more replaceable (Gilligan, 1982). This pattern has been observed in the area of organizational justice, as various types of justice norms have been more strongly related to individual outcomes for men than for women (Farh, Earley, & Lin, 1997; Lee et al., 2000). In addition, Schwartz and Rubel (2005), in a comprehensive cross-cultural study of values with 127 samples from 70 countries, found that men value self-direction more than women do. Women, in contrast, value benevolence more than men do. These value differences will likely lead men and women to differ in the extent to

which they adhere to their values in social situations. For example, a high level of self-direction means that men likely follow their values more closely in terms of attitudes and behaviors regardless of their relationships; conversely, higher benevolence values on the part of women may mean that they go against their values more often for the sake of their relationships and connections with others. Consequently, as men's responses are less dispersed due to a closer adherence to cultural values, the relationships between values and outcomes will likely be stronger for men, rather than women. Thus, we predicted

Hypothesis 2c: The predictive power of individualism–collectivism, power distance, uncertainty avoidance, and masculinity–femininity will be significantly stronger for men, rather than for women.

Hofstede (2001) considered education as one of the key institutions that perpetuates culture at a national level. As people pass through educational systems, they are indoctrinated in existing cultural values, as through daily pledges of allegiance (Massialas, 1977; Schein, 1967). Also, as Cheng (1998) stated, "the process of borrowing educational practices from another society implies an acceptance of cultural values embedded in the particular practices" (p. 14). Consequently, groups of well-educated individuals should better represent their country, improving national-level correlations. At an individual level, however, education should operate in a manner similar to age and employment status (i.e., it increases traitedness). We expected that those with higher education have increased autonomy and freedom and thus find it easier to align their values and behaviors, strengthening the relationship between values and the outcome variables. Notably, at either a national or an individual level of analysis, education should increase the observed correlations. Thus, we predicted

Hypothesis 2d: The predictive power of individualism–collectivism, power distance, uncertainty avoidance, and masculinity–femininity will be significantly stronger for those with more, rather than fewer, years of education.

Data source. There are two main ways in which researchers have operationalized Hofstede's (1980a) cultural value dimensions over the last three decades (Kirkman et al., 2006). First, cultural values are often assessed with primary data (i.e., data that are collected from the actual study participants, most often with survey-based self-reports). Second, cultural values are sometimes assigned to participants according to country scores from Hofstede's (1980a) original database. There are several reasons why the predictive power of the cultural values will be stronger for research using primary, rather than secondary, data.

Assigning country-level scores to individuals is essentially a form of stereotyping, as it relies on characteristics of the larger group to define those of the smaller group or individual. The degree to which this is appropriate depends upon the within-group variance. When it is large, the group average does not represent the individuals the group contains very well. If there is no variation, the average represents the individual perfectly. In the specific case of national culture, there is a great deal of variation; hence, it is a significant problem. Cultural values can vary between, as well as within, countries (Au, 1999; Steel & Taras, in press), meaning that

those using a single score for each country ignore within-country variance. In addition, different regions or subcultures of a single nation can have significantly different cultural values (e.g., Coon & Kemmelmeier, 2001; Huo & Randall, 1991; Lenartowicz, Johnson, & White, 2003). Of course, assigning all people from a single country the same cultural value scores creates a constant, meaning that within-country correlation analyses will be impossible. Compounding the problem, using country scores derived from previous research means assuming stability in values. Research has shown that culture does change over time (Olivas-Luján, Harzing, & McCoy, 2004; Ralston, Pounder, Lo, Wong, & Egri, 2006; Rokeach, 1989), and thus using country means from earlier studies introduces additional error in the measurement of cultural values of individuals.

For these reasons, we believe that when researchers directly assess cultural values using primary data, the data more accurately represent the actual cultural values of the respondents. Thus, the values measured by primary data will have greater predictive power than those measured by secondary data, and studies that measure the effect of culture using original culture scores will report stronger correlations. Consequently, we predicted

Hypothesis 3: The predictive power of individualism–collectivism, power distance, uncertainty avoidance, and masculinity–femininity will be significantly stronger for studies using primary, rather than secondary, data.

Cultural tightness–looseness. Building on the work of several anthropologists, sociologists, and psychologists (Pelto, 1968; Triandis, 1989), Gelfand et al. (2006, p. 1226) defined cultural tightness–looseness as “the strength of social norms and the degree of sanctioning within societies.” In tighter societies, societal institutions promote narrower socialization with higher levels of constraint and highly developed systems of monitoring and sanctioning behavior, whereas in looser societies broader socialization with lower levels of constraint and weaker systems of monitoring and sanctioning behavior is promoted. Following Gelfand et al.’s (2006) conceptual work on cultural tightness–looseness, Gelfand, Raver, et al. (2008) conducted a large-scale, cross-cultural empirical comparison study that yielded a set of quantitative indexes corresponding to positions of 33 countries along these dimensions. Although Gelfand et al. (2006) had no formal predictions about the moderating role of cultural tightness–looseness on the relationship between cultural values and outcomes, we argue that the concept can be used to help determine when cultural values will have stronger effects. For example, Gelfand et al. (2006) formally predicted that variance in individual attributes (e.g., cultural values, attitudes, beliefs, behaviors) would be lower in tighter than in looser societies. In other words, individuals are allowed much less flexibility in the expression of their individual attributes in culturally tighter societies than culturally looser societies. Lower variability is strengthened by the enforcement of both cultural values and employee outcomes in tighter, versus looser, societies. This lack of flexibility would likely mean that individuals’ attitudes, perceptions, and behaviors would be more closely linked to cultural values in culturally tighter, rather than looser, societies. Thus, we predicted

Hypothesis 4: The predictive power of individualism–collectivism, power distance, uncertainty avoidance, and masculinity–femininity will be significantly stronger for culturally tighter, rather than looser, countries.

Method

Literature Search

Our literature search was designed to include all available sources that assessed the relationship between cultural values and individual, group/organizational, and national outcomes. First, a computer search was done through the EBSCO, PsycINFO, ERIC, ProQuest, and ProQuest Digital Dissertations electronic databases. Second, comprehensive searches of over three dozen relevant journals for the 1980–2009 period (or since the journal was introduced) were conducted. Third, major books on cross-cultural studies (e.g., Hofstede, 2001; U. Kim, Triandis, Kagitcibasi, Choi, & Yoon, 1994; Triandis, 1995) and reviews of Hofstede’s work (e.g., Fernandez, Carlson, Stepina, & Nicholson, 1997; Harvey, 1997; Sondergaard, 1994; Williamson, 2002) were examined for links to studies containing data that could be used for the meta-analysis. Fourth, the reference sections of each article being coded were reviewed for links to publications potentially containing data for the meta-analysis. Fifth, publications citing articles coded for our meta-analysis were identified using the “cited by” function of the Web of Science and Google Scholar databases, and those containing relevant data were included in our data set. Sixth, requests for links to more studies were sent out through mailing list servers of the Academy of International Business and the International Management Division of the Academy of Management. Next, all scholars who were authors or coauthors of more than three articles in our database were contacted with a request for links to more published or unpublished studies. The pool included 33 researchers worldwide, 28 of whom replied and provided over one hundred additional references.¹ Finally, our review revealed that some of the studies were based on survey instruments similar to that of Hofstede’s, but no codable data were reported. Therefore, 58 authors of 47 articles (many articles were coauthored) were contacted and asked for additional data. From these, 49 authors replied and 37 provided the requested data.

Eligibility Criteria and Data Coding Procedures

Our initial pool contained over one thousand published and unpublished papers that appeared to satisfy our selection criteria. A common challenge in meta-analysis is that identical papers are rarely summarized. Studies that are considered for inclusion usually differ in terms of methodology, metric, or sample (Rosenthal & DiMatteo, 2001). Fortunately, minor instrument modifications, such as transformation of the scale length (e.g., 1 to 5 or 1 to 9), change in the sequence of the questions, or adding or dropping

¹ We are especially thankful to Geert Hofstede, who has been keeping track of the studies that have utilized his Values Survey Module and graciously shared the list of relevant papers and dissertations from his personal library.

individual items, are not likely to lead to a substantial alteration of the construct or its psychometric properties. However, if the studies are substantively different, aggregation becomes questionable, as it leads to results that, as Hunter and Schmidt (2004) stated, "are difficult or impossible to interpret" (p. 457). This is known as the incommensurability or "apples and oranges" problem (Sharpe, 1997), and it can have a major impact on the variation in the results (Steel, Schmidt, & Shultz, 2008).

When deciding on whether a study qualified for inclusion in our data set, we had to consider the trade-off of increasing the sample size at the expense of reduced commensurability. On the one hand, more relaxed study inclusion criteria allow for a larger data set. Every additional study makes the review more comprehensive and increases the number of data points available for analysis, thereby strengthening statistical power and making detection of a significant relationship between variables more likely. On the other hand, more liberal inclusion criteria lower the meta-analytic data set commensurability. This potentially increases variance within the variables and widens confidence intervals, thereby decreasing the reliability, and potentially the construct validity, of findings. To ensure validity of our findings, even at the expense of lowered comprehensiveness, we attempted to err conservatively during the process of study selection and coding. That is, when in doubt we excluded a measure, making errors of omission rather than commission. After several waves of coding and recoding, depending on the dimension, only nine (i.e., for uncertainty avoidance) to 28 (i.e., for individualism–collectivism) from the 134 considered instruments qualified for inclusion. Our meta-analytic data set contains data from hundreds of studies that assessed the relationship between cultural values and various individual, group/organizational, and national-level outcomes. To ensure measurement commensurability on the cultural value side of the relationship, we selected only studies that defined and operationalized cultural values in a manner consistent with the model and methods used by Hofstede (1980a). The choice was straightforward for the studies that used various versions of Hofstede's original Values Survey Module (VSM). A greater challenge was making inclusion decisions for the studies that used other instruments to quantify cultural values. More than one hundred cultural value measurement instruments were considered for inclusion (Taras, 2008a; Taras et al., 2009). To assess measurement similarity, we took a content validation approach, supplemented with an expert opinion survey to resolve most challenging cases, and evaluated every instrument's items for consistency with our working definitions of constructs originally introduced by Hofstede and the items of the VSM-82 and VSM-94 instrument versions. For the studies that operationalized cultural values using indices from external data sets, we tracked the source and compared the methodology used in the study with that used by Hofstede (1980a).

Due to a lack of available data, most meta-analyses' aggregation are based on content validation alone. Fortunately, the popularity of Hofstede's (1980a) model has provided some supplementary convergent validity evidence, which provides additional support for our content validation. For example, Schimmack, Oishi, and Diener (2005) empirically addressed the issue of convergent validity between Hofstede's individualism dimension and individualism as measured by instruments developed by Singelis et al. (1995) and Triandis and Gelfand (1998), the two most popular

instruments in our meta-analytic data set after Hofstede's VSM. The results of Schimmack et al.'s (2005) study confirmed convergent validity between individualism scores from Hofstede's data set and scores representing measures of individualism obtained using these other instruments. Similarly, Maznevski et al. (2002) found that their national averages for the individualism–collectivism construct obtained using their CPQ-4 instrument are "consistent with previous research, e.g., Hofstede, 1980a" (p. 275); also, their hierarchy dimension "is similar to Hofstede's dimension of power distance" and the score pattern is "consistent with his [Hofstede's] results" (p. 287).

Even when terminology suggested construct correspondence, we conducted a thorough comparative analysis of definitions and survey items to ensure that we were not "mixing apples and oranges." Models that treated individualism and collectivism as independent constructs, as opposed to Hofstede's (1980a, 2001) view of individualism and collectivism as the opposites of one continuum, as well as the models that differentiated between horizontal and vertical facets of individualism–collectivism, posed the biggest challenge. To better understand the issue, we carefully reviewed all relevant conceptual and empirical evidence and conducted a comparison of construct definitions and survey items.

Regarding the independence of individualism and collectivism, empirical evidence was conflicting. Many studies reported insignificant correlations between individualism and collectivism, but there were quite a few that reported negative correlations as well as some that reported positive correlations. Because the evidence from earlier research was inconclusive, we made a detailed comparison of the construct definitions, survey items, and empirical data among the studies included in our meta-analytic data set. The definition comparison indicated that the two constructs were the opposites of one continuum, and the survey items used to measure collectivism were usually negatively worded items found in measures of individualism. For the studies that reported separate results for individualism and collectivism, in almost two thirds of the cases the reported correlations between outcome variables and individualism had the sign opposite that of their corresponding correlations with collectivism, suggesting that the former is the opposite of the latter. Furthermore, and perhaps most important, Hofstede's instrument for quantifying individualism combined positively scored individualism items and negatively scored collectivism items. As the primary concern in meta-analysis is to ensure methodology commensurability across included studies, we believed that combining individualism and collectivism measures into a single composite score, as done by Hofstede, would ensure a greater consistency with our core model. Thus, we coded separate individualism and collectivism scores as one composite index constituting an average of individualism and inverse of collectivism scores.

As for the horizontal/vertical individualism and collectivism distinction that was present in two instruments included in our data set (Singelis et al., 1995; Triandis & Gelfand, 1998), the results of our comparative analysis of definitions and survey items suggested that the confusion arises mainly from differences in terminology. To ensure validity of our decision, we conducted a survey of 14 independent international business and management faculty and Ph.D. students (blind to the purposes of our study) and asked them to classify each of the four constructs along Hofstede's culture dimensions. The survey yielded a very high agreement level and

supported our initial decisions. In particular, a thorough comparison of definitions and items revealed that horizontal individualism was indistinguishable from Hofstede's general individualism construct and that horizontal collectivism was its opposite. The 14 raters provided a 92.9% agreement on this decision. These scores were coded according to the procedure described in the previous paragraph. Regarding vertical individualism, all reviewed definitions and individual items included in measures of vertical individualism referred to concepts such as competitiveness, assertiveness, and perceived importance of advancement, which are the basic components of what Hofstede called masculinity. For example, vertical individualism items in Singelis et al.'s (1995) instrument used wording such as "It is important for me that I do my job better than the others" and "Competition is law of nature." Therefore, to maintain consistency with Hofstede's framework, we coded vertical individualism as masculinity. To check if this decision affected the validity of our results, we conducted a post hoc validity analysis that revealed that our coding procedures did not have any effect on our results (i.e., the results for masculinity were the same with or without these vertical individualism results included). Furthermore, the 14 raters provided 100% agreement on this decision.

Regarding vertical collectivism, some of the definitions of the construct and some of the survey items referred to hierarchy in a group and respect for authority, which are elements that Hofstede associated with power distance. However, this was not a concern with the more popular measures of vertical collectivism (e.g., Singelis et al., 1995; Triandis & Gelfand, 1998) that, according to our comparative analysis, operationalized vertical collectivism as the opposite of Hofstede's individualism construct and used items that were conceptually very close to Hofstede's negatively scored individualism items. The 14 raters provided a 96.4% agreement on this decision, and thus we coded vertical collectivism as the inverse of general individualism.

We coded the effects of cultural values as our primary variable. These usually were expressed as correlations between one of the four original Hofstede values and indicators of various outcomes. In a few cases, when the effects were expressed as difference scores (i.e., *d* scores), they were converted and coded as Pearson correlation coefficients using standard score conversion equations (Hunter & Schmidt, 2004). We classified our studies as individual, group, and country level depending on the level of the data in their corresponding data sets. Studies that relied on data representing responses of individuals were classified as individual-level studies (refer to Table 2 for results). Studies that used aggregated group and national-level data were included in our group and national-level analyses of culture's main effects (refer to Tables 3 and 4, respectively). This approach to classifying levels raises concern about the possibility of committing ecological fallacy. Hofstede (1980a, 2001) repeatedly stated that his VSM instrument was designed to be used exclusively for national-level analysis of culture. This claim has been questioned on the basis of arguments that the original data used to develop the instrument came from an individual-level employee attitude survey and that the instrument items refer to individual preferences and beliefs rather than national-level phenomena (e.g., Javidan, House, Dorfman, Hanges, & de Luque, 2006). To ensure validity of our approach, even though our classification of studies by the level of analysis was

based solely on the data level (individual vs. aggregated), we compared the data generated using Hofstede's VSM (the only instrument used in our individual-level analysis claimed to have been developed for national level of analysis) to the data generated using the other individual-level instruments. The results showed no substantive differences in means and distribution of the data, not only at the individual but also at the group and national levels. Thus, for the individual-level analyses, we retained studies that used Hofstede's VSM as well as those studies that used measures developed specifically for the individual level.

In addition, we coded the sample size, sample demographic characteristics, reliability of the instruments, and the country of origin of the samples. Finally, as a test of the moderating effect of cultural tightness-looseness, our meta-analytic data set was supplemented with indices from Gelfand, Raver, et al.'s (2008) study that provided cultural-looseness scores and ranks for 33 countries.

The vast majority of the coded studies were conducted at the individual level of analysis. For the studies that tested the relationships at the group/organization or country levels, we recorded the number of individuals representing the groups/organizations or national samples in addition to the number of groups/organizations or countries included in the analysis. For the four cases where the number of individuals in a particular group/organization or national sample was not reported, we substituted the average sample size across studies of that type for the missing sample size in our meta-analytic data set. All papers were coded at least twice, and the majority of the studies were independently coded three times. Inconsistencies were resolved by reexamining the source article; at times, we contacted the authors of the original publications for clarification.

Once the studies were coded, their results were grouped into the outcome categories discussed in our theory section. Again, the problem of commensurability arises. Though our research questions were generally broad—primarily dealing with the ability of cultural values to predict certain groups of outcomes—we wanted as much consistency of measures within each group as the available data permitted. To ensure that each result belonged under the appropriate category, we conducted a thorough comparison of construct definitions and original instrument items used to derive each particular data point. Any variable that was not consistent enough with those included in a particular group was excluded from the meta-analysis. In this endeavor, we again erred conservatively. Of 5,452 data points recorded in our original data set, only 2,453 (1,911 in main analysis, an additional 542 added for the moderator analysis) were eventually used in the meta-analysis.

Statistical Analysis

We conducted our study in accordance with Hunter and Schmidt's (2004) meta-analytic procedures for a random-effects model. Correlations were weighted and averaged according to sample size and then corrected for unreliability/attenuation using artifact distribution. On average, the correction for unreliability increased scores by 0.05. The magnitude of the score increase due to correction was very similar across the cultural dimensions and

the outcome types.² Sampling error in the measures was calculated at the aggregate level. The main meta-analytic effect sizes were calculated as sample-size-weighted, reliability-corrected estimates of the relationships between cultural values and outcome variables (ρ). Consistent with the tradition in some disciplines (for a recent review of meta-analytic practices, see Dieckmann, Malle, & Bodner, 2009), we also report the uncorrected weighted meta-analytic correlations (r). Confidence and credibility intervals of 95% were calculated around each corrected population estimate ρ . Credibility intervals that do not cross zero indicate good generalizability of the results (i.e., the direction of the relationship holds true for a wide variety of samples). Wide credibility intervals generally indicate possible moderators of main effects, and narrow intervals suggest that the effect does not vary across groups and contexts. In addition to correlations between cultural values and criteria, sample characteristics (e.g., age, education level, sex), national origin of the sample (i.e., country of residence), and data source (i.e., primary vs. secondary sets of indices) were coded for control and moderator analysis purposes. These moderators were analyzed using weighted least squares regression (consistent with Steel & Kammeyer-Mueller, 2002). Finally, meta-analysis typically generates summary statistics that are neither clearly independent (different samples) nor dependent (same samples) but partially overlapping. Consequently, to evaluate the significance of the differences among effect sizes, we used independent sample t tests, which yield more conservative estimates of the significance level.

Results

Sample Description

The meta-analytic data set describes the relationships between cultural values, as defined and operationalized by Hofstede (1980a, 2001), and 82 types of individual-level outcomes, as well as six and 18 types of outcomes for group and country levels, respectively. Effects of cultural values in numerous (300+) other categories were represented by only one or two data points and were excluded from the analysis, as they could not be meaningfully meta-analyzed due to the small number of available observations per relationship. However, these data were included in the moderator analysis. Even though these data described outcomes represented by too few data points to be properly meta-analyzed, they were equally relevant and provided meaningful information about the moderating effect of various factors on the relationship between cultural values and outcomes.

The final pool comprised 598 empirical articles, master's and doctoral theses, conference presentations, and unpublished studies from the period between 1980 and 2009, containing data gathered between 1967 and 2008. Of those, 384 papers provided codable numeric coefficients of the degree of association between cultural values and dependent variables included in the study. Another 214 publications were based on a two-sample research design with t test or analysis of variance difference tests, with both the culture and the outcome variables being continuous. Generally, any form of association statistics (e.g., F , d , t) can be converted to a corresponding correlation coefficient (r), but there are unfortunately some exceptions for which such conversions are impossible (e.g., the case of two-sample t test mean-comparison research design with both variables being continuous). However, even

though findings of this type cannot be used to estimate the magnitude of the relationship, they do provide meaningful relevant information about the direction of the relationship. Thus, in cases like this, we coded the results as a simple vote count (i.e., positive effect, no effect, negative effect). Table 1 provides a condensed description of the entire meta-analytic database (i.e., data points used in both main-effect and moderator analyses).

For the main effect analyses, the individual level of measurement was represented by a data set of 1,605 data points representing relationships between cultural values and organizationally relevant outcomes, of which 1,204 were coded as numeric effect sizes and 401 were coded as vote count. The total sample comprised responses from 224,632 individuals (total 611,816 responses).³ An additional 49 data points representing aggregated data from an estimated 1,998 groups or organizations (total 3,690 responses) were used for group/organization-level analyses. Finally, 258 data points representing 8,904 national samples were used in national-level analyses. Most of the studies that analyzed effects of cultural values at the national level coupled national cultural indices from external sources, such as those reported by Hofstede (1980a, 2001), with various archival national-level data. This approach unfortunately made it impossible to determine the exact number of individuals participating in these studies. An additional 742 data points representing unique outcome categories that were not included in the main-effect analysis were used in combination with the main data set in the moderator analysis.

Cultural Values as Main Effects

Tables 2, 3, and 4 provide summaries of the main effect findings for each of the cultural value dimensions at the individual, group/organization, and national levels, respectively. The tables contain information about the average sample-size-weighted uncorrected and unreliability-corrected meta-analytic effect sizes (r and ρ , correspondingly). The r and ρ coefficients both represent the degree of association between cultural value dimensions and corresponding outcomes, but corrected meta-analytic effect ρ is a more accurate estimate of the true relationship in the population. The tables also provide lower and higher boundaries of confidence and credibility intervals around the corrected effect-size estimate ρ (CoI and CrI), as well as the results of the vote count analysis (i.e., the number of studies that found a significant positive [#+], nonsignificant [#ns], and significant negative [#−] effect) and the numbers of data points (k) and individuals (N) used to obtain the findings. Of note, the summaries of meta-analytic effects for each group of outcomes are the weighted averages of absolute meta-

² To calculate the magnitude of correction for unreliability for a specific outcome, divide the uncorrected correlation coefficient by the reliability-corrected correlation coefficient.

³ It was impossible to determine the exact total number of individuals, as many studies did not report the exact number of individual used in each analysis. The total sample size provided here is an approximation that is based on the sum of total sample sizes reported in each article. Also, the total number of responses (the sum of all N s in Tables 2–4) is different from the total number of individuals who provided the responses. Most studies explored the effects of multiple cultural values, and thus responses of the same participants appear separately in our tables for different cultural values.

Table 1
Meta-Analytic Sample Characteristics by the Level of Measurement and Cultural Dimension

Level of measurement, cultural value dimension	Individual					Group					National					Grand total
	IND	PD	UA	MAS	Total	IND	PD	UA	MAS	Total	IND	PD	UA	MAS	Total	
Numeric effect, data point count	771	164	73	196	1,204	34	5	4	2	45	87	71	56	44	258	1,507
Vote count, data point count	282	73	19	27	401	4	0	0	5	9	0	0	0	0	0	410
% data points obtained using VSM	21.2	57.0	70.8	62.3	34.5	18.5	36.8	78.6	20.0	30.1	76.2	92.1	80.7	100.0	83.2	40.2
Moderator analysis ^a																
Age, count	1,247	222	113	269	1,851											
Age, mean ^b	26.8	28.2	33.3	28.8	28.2	30.0	34.5	34.3	34.3	31.2	35.6	35.3	33.4	33.4	34.5	27.9
Gender, data point count	1,170	215	102	252	1,739											
Gender, mean (% male in the sample) ^b	48.9	59.5	61.9	54.9	52.4	51.2	51.6	49.1	53.5	51.3	56.2	62.0	65.8	58.7	58.6	52.7
Student status, data point count	1,310	261	138	336	2,045											
Student samples, % ^b	60.0	43.3	35.8	61.9	56.5	45.2	34.7	66.7	66.7	49.4	20.1	15.9	17.5	17.4	18.9	49.1
Education, data point count	1,179	221	115	296	1,811											
Average years of education ^b	14	15	15	15	15	14	15	16	14	14	15	16	17	16	16	15
Cultural tightness– looseness	976	180	77	208	1,441											
% original data for culture	98.4	95.8	90.7	94.2	96.7	89.5	77.4	76.1	51.3	84.0	44.8	23.5	22.0	31.1	31.9	84.2

Note. Most publications included in the meta-analytic data set were based on multicountry, multisample research design. The summary provides count of data points corresponding to count of samples, not publications. IND = individualism; PD = power distance; UA = uncertainty avoidance; MAS = masculinity; VSM = Values Survey Module.

^a Moderator analysis was conducted with individual-level data only. All numeric data points used in the main-effect analysis were included in the moderator analysis. Vote-count studies were not used in moderator analysis and are not accounted for in the sample characteristics report provided here. ^b The exact report on demographics of the participants could be provided only for individual-level studies; many group and national level studies used secondary data, normally Hofstede's country scores, to operationalize culture. Provided here is an estimate of the demographics of the pooled sample.

analytic effects. That is, they illustrate only the strength of the effect of culture in each category of outcomes and not the direction of the effect. Note also that some of the meta-analytic coefficients have been derived on the basis of summaries of very few studies, and thus these findings must be interpreted with caution.

Research Question 1 asked whether or not there were significant differences in predictive power when each of the cultural values was examined separately. Albeit overall statistically significant ($p < .01$) as per a series of tests for correlation coefficient differences for independent samples, the differences across dimensions at the individual level of analysis were negligible. There was an overall weighted absolute effect size of $\rho = 0.18$, with a range from $\rho = 0.15$ for power distance and uncertainty avoidance to $\rho = 0.19$ for individualism and masculinity. At the higher levels of analysis, the effects of cultural values were found to be less consistent across the four cultural value types. At the group level, the overall absolute effect size averaged $\rho = 0.21$ and ranged from $\rho = 0.17$ for power distance to $\rho = 0.45$ for masculinity, though the overall difference between the correlation coefficients was statistically insignificant due to the small sample size. The difference in predictive power of the cultural values was even more pronounced (significantly different, $p < .01$) at the country level. Effect sizes ranged from $\rho = 0.15$ for masculinity to $\rho = 0.47$ for individualism, averaging $\rho = 0.35$. The difference in conclusions for individual versus aggregate levels of analysis with respect to

our Research Question 1—negligible variation in predictive power of different values at the individual level versus substantial variation at higher levels of analysis, notably at the national level—could be exacerbated by the limited data availability for the analyses at the aggregate levels. Thus, further research may be needed to provide a definitive answer to this question.

Although we made no a priori predictions about differences in the predictive power of the cultural value dimensions across the different levels of analysis, we did find that the overall effects sizes for the values increased as the level of analysis increased. For example, the overall absolute unreliability-corrected weighted effect size was $\rho = 0.18$ at the individual level, $\rho = 0.21$ at the group level, and $\rho = 0.35$ at the national level (see Tables 2–4). Hofstede (1980a, 2001) was clear that his conceptualization and operationalization of cultural values were intended only for the country level of analysis, and researchers attempting to utilize his constructs and measures at lower levels risk committing an ecological fallacy (i.e., assuming that higher level constructs and measures will generalize to lower levels). Thus, it may be tempting to conclude that ecological fallacy is the reason that there are stronger relationships when data are analyzed at the country level rather than the individual or group/organization level. However, a more reasonable rationale for these differences in the magnitude of the effect across levels is the problem of ecological inference (Robinson, 1950; Thorndike, 1939); that is, “relationships among ag-

gregate data tend to be higher than corresponding relationships among individual data elements" (Kozlowski & Klein, 2000, p. 8). According to Steel and Ones (2002), this increase can often be attributed to a reduction of measurement error at the aggregated level (i.e., aggregated data are expressed in mean scores, which are exceedingly stable when based on large samples). Thus, any comparisons in differences of magnitude of effect across levels in our study must be judged in light of the ecological inference problem.

Research Question 2 asked whether or not the predictive power of the cultural values was as strong as that of other individual-level predictors for our groupings of organizationally relevant outcomes. Richard, Bond, and Stokes-Zoota (2003) offer a good starting point with their summary of effect sizes reported in 322 meta-analyses. These analyses included over 25,000 social psychology studies on a wide range of issues published in the last 100 years and involving over eight million people. According to Richard et al.'s comprehensive review, the overall median uncorrected effect size across all published studies in social psychology regardless of the topic is $r = .18$ (mean $r = .21$), with about a third reporting effect sizes of less than 0.10 and another third reporting an effect size of under $r = .20$. Unfortunately, Richard et al.'s review did not differentiate among individual, group, or national levels of analysis. Our individual-level overall absolute effect size of $\rho = 0.18$ (uncorrected $r = .13$), group-level overall absolute effect size of 0.21 (uncorrected $r = .17$), and national-level overall absolute effect size of 0.35 (uncorrected $r = .28$), as reported in Tables 2–4, are comparable to, though a bit lower than, those found by Richard et al. (2003). This indicates that the size of the effect of cultural values is similar to that of other popular constructs that have been used in the social sciences.

To more directly compare the predictive power of cultural values and that of other commonly used predictors of individual outcomes, we conducted a comprehensive search for meta-analytic studies that evaluated the effects of other predictors of emotions, attitudes and perceptions, behavior, and job performance. Demographic characteristics, such as age, gender, and education level, have long been viewed as factors influencing workplace outcomes. In their review, Makin and Robertson (1986) noted that personality and cognitive tests are also among the best selection tools. Thus, we based our analysis on a comparison of the predictive power of cultural values versus personality, general mental ability, and demographics. We found 82 such individual-level meta-analyses, of which 35 explored various effects of personality traits; 25 explored those of general mental ability; and 27 explored those of demographics on emotions, attitudes, behaviors, and performance (the sum is greater than 82, as some of these meta-analyses explored multiple categories).

Table 5 provides a comparison of the predictive power of cultural values versus personality, general mental ability, and demographics based on our groupings of organizationally relevant outcomes (i.e., emotions, attitudes and perceptions, behaviors, and job performance). Overall, the corrected weighted absolute average effect size obtained in our meta-analysis ($\rho = 0.18$) compares quite favorably with that of demographics ($\rho = 0.10$) and personality ($\rho = 0.15$). General mental ability was reported to have an overall stronger predictive ability ($\rho = 0.48$). The comparative ranking is the same for uncorrected meta-analytic coefficients.

Culture also generally comes out as a comparable or better predictor when the comparison is done separately for emotions,

attitudes/perceptions, behaviors, and performance, but there are some notable exceptions. For emotions and attitudes/perceptions, the average predictive power of culture ($\rho_s = 0.27$ and 0.20, correspondingly) was stronger than that of personality ($\rho_s = 0.20$ and 0.18), demographics ($\rho_s = 0.09$ and 0.10), and even general mental ability ($r_s = .07$ and 0.09).⁴ However, as we move from broader to more specific outcome categories, the comparison is not always in favor of culture. For example, although overall personality did not compare favorably to culture in terms of predicting emotions, conscientiousness stood out as a particularly strong predictor ($\rho = 0.35$). Similarly, neuroticism showed somewhat better predictive power with respect to behaviors ($\rho = 0.23$) than culture did.

For behaviors, even though culture was found to have a better predictive validity than personality and demographics ($\rho = 0.15$ vs. $\rho = 0.14$ and $\rho = 0.13$, respectively), general mental ability was ranked as a definite number one predictor ($\rho = 0.25$). Again, the rankings were not uniform across specific outcomes. Although personality overall was found to be just about as good a predictor of behaviors and culture, conscientiousness stood out again as a much stronger predictor ($\rho = 0.28$). And so did work experience ($\rho = 0.16$), which appeared to be a better predictor of behaviors than the other demographic characteristics.

Finally, the comparison was not generally in favor of culture with respect to performance. Culture was found to be the weakest predictor of performance, with the direct effect of cultural values being close to zero ($\rho = 0.03$). Demographics and personality showed comparatively better results ($\rho = 0.12$ and $\rho = 0.09$, respectively), and general mental ability stood out as a remarkably good predictor ($\rho = 0.54$) of performance.

The results of the comparative analysis of predictive validities were consistent with the value–attitude–behavior hierarchy, in which values and attitudes are more closely related than values and behaviors (e.g., Homer & Kahle, 1988). Culture did have better predictive validity with respect to emotions and attitudes and was comparatively better than demographics, general mental ability, and personality. However, the superiority of culture fades as we move toward more tangible outcomes: For behaviors, culture shows predictive power only marginally stronger than that of personality and demographics, and it is weaker than mental ability; for performance, culture is the weakest predictor.

Although we asked no research questions and made no a priori predictions regarding outcomes more specific than our higher level categorization scheme (i.e., emotions, attitudes and perceptions, behaviors, and job performance), our results do allow for examination of specific outcomes that are highly relevant to managers. Note that some of these meta-analytic coefficients were derived on the basis of three or fewer studies. The reliability of these results is questionable, and they should be interpreted with caution. To warn readers, we provide the number of samples next to the meta-analytic coefficients that are based on a small number of studies. For example, although the effect of cultural values on behaviors seems to be a relatively weaker predictor ($\rho = 0.15$) than

(text continues on page 424)

⁴ We found no studies that reported corrected meta-analytic coefficients for the effect of general cognitive ability on emotions and attitudes and thus list here r rather than ρ coefficients.

Table 2
Main Effects of Culture, Individual Level

Variable	IND													
	Effect size									Vote count				
	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD</i> _{ρ}	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	#+	#ns	#-
Behaviors: Work-related														
Absenteeism	6	1,260	0.05	0.05	0.07	-0.01	0.11	0.05	0.05					
Cooperation with colleagues	18	3,606	-0.10	0.13*	0.14	-0.20	-0.07	-0.34	0.07					
Effort	6	3,534	-0.08	-0.11*	0.07	-0.17	-0.05	-0.20	-0.03	2	274			2
Entrepreneurial behavior	4	1,839	0.09	0.12*	0.02	0.11	0.13	0.12	0.12					
Helpfulness	4	769	-0.15	-0.20*	0.13	-0.32	-0.08	-0.37	-0.02					
Innovation	4	783	-0.11	-0.15*	0.10	-0.24	-0.07	-0.22	-0.07					
Organizational citizenship behaviors	8	3,455	-0.16	-0.21*	0.14	-0.30	-0.12	-0.45	0.03					
Reaction to injustice: Active (voice, exit)	3	619	0.12	0.18*	0.04	0.04	0.32	-0.05	0.41	5	2,076	3	1.00	1
Reaction to injustice: Passive (loyalty, neglect)	3	334	-0.07	-0.12	0.21	-0.32	0.10	-0.46	0.22					
Turnover	23	6,466	0.04	0.05	0.15	-0.01	0.11	-0.20	0.30	3	1,639	2		1
Totals/absolute weighted averages	78	22,665	0.09	0.12	0.11					10	3,989			
Behavior: Communication														
Indirectness	12	6,045	0.13	-0.19*	0.13	-0.23	-0.14	-0.41	0.03	10	3,704			10
Self-promotion	13	2,550	0.13	0.20*	0.09	0.15	0.25	0.12	0.28	16	5,177	16	1	
Sensitivity to others	14	3,747	-0.12	-0.16*	0.14	-0.21	-0.12	-0.39	0.08	9	2,838		1	8
Positive attitude to silence	4	1,856	0.08	-0.11*	0.02	-0.04	-0.19	0.10	0.12	1	435			1
Openness in communication	3	1,381	0.13	0.15*	0.14	0.01	0.30	-0.10	0.40	1	435		1	
High-low context communication	3	2,238	0.14	-0.15	0.08	-0.20	0.10	-0.09	0.21	5	1,181	5		
Tendency to display emotions	15	3,812	-0.11	-0.14*	0.08	-0.19	-0.10	-0.23	-0.05	2	191			2
Propensity to dishonesty in communication	4	1,983	-0.08	-0.09*	0.17	-0.13	-0.04	-0.40	0.22	2	2,198		7	
Totals/absolute weighted averages	68	23,612	0.12	0.16	0.11					46	16,159			
Behaviors: Conflict management/negotiation														
Conflict avoidance	4	514	-0.21	-0.30*	0.19	-0.48	-0.14	-0.58	-0.02	13	4,241		1	12
Confrontation	5	527	0.14	0.20*	0.13	0.08	0.31	0.20	0.20					
Accommodation	3	331	-0.16	-0.24*	0.18	-0.46	0.00	-0.50	0.02	4	1,429		1	3
Compromising	4	551	-0.18	-0.23*	0.07	-0.31	-0.14	-0.23	-0.23	22	5,685		5	17
Cooperation with opponents in negotiations	6	639	0.10	0.13*	0.06	0.09	0.18	0.13	0.13					
Totals/absolute weighted averages	22	2,562	0.16	0.21	0.12					39	11,355			
All behaviors: Overall weighted averages/totals														
	168	48,839	0.11	0.14	0.11					95	31,503			
Attitudes and perceptions: Work-related														
Ethics-avoiding unethical behavior	7	9,762	0.25	0.39*	0.09	0.34	0.44	0.25	0.52	7	1,355	4	1	2
Exchange ideology (this for that)	6	1,345	-0.20	-0.31*	0.16	-0.44	-0.14	-0.54	-0.08					
Feedback seeking	5	850	-0.17	-0.31*	0.04	-0.28	-0.22	-0.25	-0.25					
Identification with organization	7	1,323	-0.24	-0.32*	0.10	-4.00	-0.23	-0.41	-0.23					
Organizational commitment: Affective	8	4,169	-0.16	-0.21*	0.10	-0.28	-0.14	-0.38	-0.05	2	904			2
Organizational commitment: Continuance	6	3,279	-0.15	-0.21*	0.09	-0.28	-0.13	-0.34	-0.07	2	904	1		1
Organizational commitment: General	29	13,522	-0.21	-0.27*	0.31	-0.42	-0.19	-0.88	0.34					
Organizational commitment: Normative	7	3,589	-0.20	-0.27*	0.14	-0.37	-0.17	-0.52	-0.01	2	904			2
Satisfaction, coworker	4	1,589	-0.12	-0.17*	0.12	-0.28	-0.06	-0.35	-0.02	3	2,089	2		1
Satisfaction, job satisfaction	22	8,894	-0.16	0.21*	0.17	-0.28	-0.14	-0.52	0.10	3	592	2		1
Satisfaction, supervisor	8	3,764	0.11	0.14*	0.12	0.06	0.23	-0.07	0.35	2	575	2		
Trust	7	2,316	-0.17	-0.24*	0.10	-0.31	-0.15	-0.38	-0.09					
Totals/absolute weighted averages	116	54,402	0.19	0.26	0.17					21	7,323			
Attitudes and perceptions: Group-related														
Need for affiliation	14	3,895	-0.28	-0.37*	0.13	-0.44	-0.31	-0.57	-0.17	1	1,025			1
In-group favoritism	4	1,381	-0.21	-0.28*	0.07	-0.34	-0.22	-0.28	-0.28	22	6,907	4	1	17
Team commitment	3	1,026	0.24	-0.34*	0.03	-0.36	-0.32	-0.34	-0.34					
Independence	7	1,571	0.20	0.27*	0.17	0.15	0.39	-0.01	0.55					
Social avoidance	23	4,918	-0.19	-0.25*	0.15	-0.31	-0.18	-5.00	0.01					
Conformity	22	6,725	-0.25	-0.36*	0.17	-0.43	-0.28	-0.67	-0.05	7	3,326			7
Teamwork preference	26	7,306	-0.15	-0.21*	0.27	-0.32	-0.10	-0.73	0.30	8	2,474	1	1	6
Totals/absolute weighted averages	99	26,822	0.21	0.29	0.18					38	13,732			

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PD														
Effect size									Vote count					
<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_p</i>	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	#+	#ns	#-	
		4	849	0.14	0.15*	0.09	0.07	0.23	0.07	0.23				
4	849	0.14	0.15	0.09					0	0				
									2	316	2			
5	1,036	0.12	0.17*	0.06	0.10	0.24	0.17	0.17	4	881	3	1	1	
											1	435	1	
											256	1	1	1
3	2,161	-0.10	-0.14*	0.08	-0.23	-0.05	-0.25	-0.03	2	632	1	1		
									2	174				2
8	3,197	0.11	0.15	0.07					13	2,694				
									1	508		1		
									2	596		2		
									4	1,113	1			3
0	0								7	2,217				
12	4,046	0.11	0.15	0.08					20	4,911				
6	5,876	-0.25	-0.38*	0.19	-0.53	-0.24	-0.75	-0.02	5	708	2	1	2	
3	348	-0.20	-0.26*	0.17	-0.46	-0.06	-5.00	-0.03						
6	2,490	0.08	0.12	0.16	-0.01	0.40	-0.16	0.40	1	441		1		
5	1,910	0.21	0.30*	0.24	0.09	0.52	-0.16	0.76						
6	1,666	0.28	0.39*	0.19	0.25	0.54	0.06	0.72						
16	6,483	0.16	0.21*	0.16	0.13	0.29	-0.08	0.49	1	211		1		
5	3,130	0.06	0.09*	0.08	0.01	0.15	-0.02	0.19	1	211				1
5	1,516	0.26	0.33*	0.18	0.18	0.48	0.00	0.65						
52	23,419	0.18	0.26	0.17					8	1,571				
9	7,029	-0.07	-0.10*	0.14	-0.18	-0.02	-0.36	0.15	1	441				1
4	6,512	0.06	0.10*	0.07	0.03	0.17	-0.01	0.21	3	644	3			
9	2,324	-0.11	-0.14*	0.15	-0.24	-0.05	-0.39	0.11	1	300	1			
22	15,865	0.07	0.11	0.11					5	1,385				

(table continues)

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Table 2 (continued)

Variable	IND													
	Effect size									Vote count				
	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_{ρ}</i>	CoI ₁	CoI _h	CrI ₁	CrI _h	<i>k</i>	<i>N</i>	#+	#ns	#-
Attitudes: Conflict management/negotiation														
Concern for others' interests	9	2,123	-0.27	-0.37*	0.15	-0.47	-0.28	-0.62	-0.13	6	1,962			6
Preference for third-party involvement	3	170	-0.14	-0.15*	0.03	-0.19	-0.11	0.14	-0.16	14	4,138		2	12
Totals/absolute weighted averages	12	2,293	0.26	0.35	0.14					20	6,100			
Attitudes: Perceived justice and reward allocation rule preference														
Perceived justice in organization	13	3,870	-0.08	-0.10*	0.16	-0.18	-0.01	-0.37	0.18					
Equality	8	1,985	0.07	0.09*	0.25	0.03	0.16	-0.35	0.54	12	2,611	3	3	6
Equity	15	5,119	-0.06	-0.09*	0.18	-0.12	-0.04	-0.43	0.26	26	6,521	15	4	7
Need											9	1,880	1	
Seniority	4	664	-0.17	-0.28*	0.08	-0.37	-0.19	-0.28	-0.28	4	608		1	3
Totals/absolute weighted averages	40	11,638	0.07	0.10	0.18					51	11,620			
Attitudes and perceptions: Leadership style preference														
Charisma	7	3,447	-0.19	-0.25*	0.06	-0.30	-0.19	-0.32	-0.18					
Directive	13	2,629	-0.13	-0.18*	0.07	-0.22	-0.14	-0.18	-0.18	6	698			6
Participative	8	6,513	0.16	0.24*	0.08	0.19	0.29	0.11	0.37	4	1,556	3		1
Inspirational	7	3,077	-0.07	-0.09*	0.11	-0.17	0.00	-0.28	0.00					
Transformational	4	4,047	0.00	0.00	0.07	-0.06	0.06	-0.09	0.00					
Preference for leader who stimulates intellectual input	3	2,293	-0.05	-0.07	0.11	-0.20	0.06	-0.28	0.14					
Preference for paternalism	3	886	0.29	0.46*	0.09	0.33	0.59	0.39	0.53					
Closeness with supervisor										3	490		3	
Totals/absolute weighted averages	45	22,892	0.11	0.16	0.08					13	2,744			
Attitudes and perceptions: Nonwork-related														
Religiosity	23	9,297	-0.24	-0.35*	0.18	-0.42	-0.27	-0.68	-0.01					
Nationalism/ethnocentrism	10	3,900		-0.06*	0.08	-0.12	-0.01	-0.19	0.06					
Family values, importance of family	15	4,315	-0.10	-0.13*	0.14	-0.20	-0.07	-0.36	0.09					
Family values, work centrality	9	2,853	0.23	0.32*	0.14	0.21	0.41	0.08	0.56	2	1,619	2		
Equality-individual values	5	6,042		0.18	0.16	0.20	-0.17	0.18	0.53					
Willingness to seek counseling/professional help	4	1,364	-0.13	-0.17*	0.11	-0.28	-0.07	-0.36	0.01	5		3		2
Acculturation	20	3,695	0.10	0.13*	0.15	0.05	0.21	-0.11	0.36	2	226	1	1	
Satisfaction, life satisfaction	11	7,093	0.10	0.14*	0.09	0.09	0.20	0.00	0.29	4	959	3		1
Coping active	4	680	0.17	0.23*	0.17	0.07	0.41	-0.04	0.51					
Coping passive	4	794	-0.20	-0.29*	0.18	-0.45	-0.13	-0.58	0.01					
Gender role equality	3	4,163	0.09	0.18*	0.04	0.12	0.24	0.18	0.18	1	1,080	1		
Totals/absolute weighted averages	108	44,196	0.12	0.20	0.13					14	3,884			
All attitudes and perceptions: Overall weighted averages/totals														
	420	162,243	0.16	0.23	0.15					157	45,403			
Emotions														
Depression	12	1,964	-0.10	-0.11*	0.17	-0.22	-0.03	-0.38	0.16	2	216		2	
Anxiety	8	1,206	-0.09	-0.11*	0.15	-0.22	-0.01	-0.33	0.11	7	1,468		1	6
Embarrassability	9	3,253	-0.31	-0.42*	0.10	-0.47	-0.35	-0.56	-0.27	1	141			1
Totals/absolute weighted averages	29	6,423	0.20	0.27	0.13					10	1,825			
Traits														
Agreeableness	14	7,708	-0.13	-0.21*	0.12	-0.27	-0.12	-0.41	-0.01					
Conscientiousness	15	8,740	-0.09	-0.14*	0.17	-0.22	-0.04	-0.45	0.17					
Extraversion	12	3,896	0.07	0.09	0.21	-0.03	0.21	-0.31	0.48					
Neuroticism	10	5,717	-0.04	-0.07	0.10	-0.12	0.01	-0.23	0.10					
Openness	17	7,036	0.04	0.06*	0.10	0.02	0.11	-0.10	0.23					
Internal locus of control	6	1,455	0.05	0.07	0.12	-0.02	0.17	-0.09	0.23	2	737	2		
External locus of control	6	1,506	-0.17	-0.22*	0.11	-0.31	-0.14	-0.36	-0.07					
Competitiveness	13	1,964	0.13	0.17*	0.13	0.10	0.25	0.00	0.34	1	315		1	
Risk liking	7	1,480	0.02	0.04	0.17	-0.10	0.18	-0.23	0.32	6	1,419	2	1	3
Self-esteem	33	7,211	0.19	0.25*	0.19	0.19	0.32	-0.09	0.60	11	4,602	9		2
Self-efficacy	9	3,341	0.12	0.14*	0.10	0.08	0.21	-0.01	0.00					
Totals/absolute weighted averages	142	50,054	0.10	0.14	0.14					20	7,073			
Performance	23	7,346	0.02	0.02	0.14	-0.03	0.08	-0.21	0.26					
Weighted grand averages/totals														
	771	271,232	0.14	0.19	0.14					282	85,804			

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PD														
Effect size									Vote count					
<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_p</i>	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	#+	#ns	#-	
0	0								0	0				
	9	4,117	0.15	0.19*	0.08	0.14	0.25	0.08	0.31					
6	3,369	0.05	0.07	0.12	-0.03	0.16	-0.13	0.26	5	1,046	2	2	1	
8									6	913		2	4	
										3	656	3		
15	7,486	0.10	0.14	0.10					3	508	2		1	
									17	3,123				
13	2,089	0.24	0.33*	0.18	0.24	0.43	0.05	0.61	5	447	4	1		
8	5,973	-0.10	-0.15*	0.10	-0.22	-0.08	-0.33	-0.03	11	2,546	1		10	
	7	1,903	0.01	-0.02	0.16	-0.14	0.09	-0.28	0.24					
	3	4,483	0.02	0.03	0.03	-0.01	0.06	0.03	0.03					
31	14,448	0.08	0.12	0.10					4	615			4	
	5	801	0.25	0.36*	0.13	0.24	0.48	0.19	20	3,608				
3	8,706	-0.02	-0.03	0.11	-0.15	0.09	-0.23	0.17	0.52					
3	446	0.09	0.11	0.13	-0.06	0.28	-0.08	0.31						
11	9,953	0.04	0.06	0.11					0	0				
131	71,171	0.11	0.16	0.13					50	9,687				
0	0								0	0				
4	3,190	0.07	0.10	0.10	-0.02	0.21	-0.09	0.29						
4	4,190	0.12	0.18*	0.04	0.14	0.21	0.18	0.18						
3	605	0.07	0.10	0.07	0.02	0.18	0.10	0.10	1	315			1	
3	767	-0.11	-0.16*	0.10	-0.26	-0.06	-0.24	-0.07	1	233			1	
14	8,752	0.10	0.14	0.07					2	548				
14	3,366	0.01	0.01	0.15	-0.09	0.07	-0.26	0.24	0	0				
164	85,652	0.11	0.15	0.12					73	15,329				

(table continues)

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Table 2 (continued)

Variable	UA										Vote count				
	Effect size														
	<i>k</i>	<i>N</i>	<i>r</i>	ρ	SD_{ρ}	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	#+	#ns	#-	
Behaviors: Work-related															
Absenteeism															
Cooperation with colleagues															
Effort															
Entrepreneurial behavior															
Helpfulness															
Innovation	5	1,636	-0.28	-0.41*	0.20	-0.57	-0.30	-0.78	-0.04						
Organizational citizenship behaviors															
Reaction to injustice: Active (voice, exit)															
Reaction to injustice: Passive (loyalty, neglect)															
Turnover															
Totals/absolute weighted averages	3	1,264		0.41	0.10					0	0				
Behavior: Communication															
Indirectness															
Self-promotion															
Sensitivity to others	3	804	0.11	0.15*	0.05	0.08	0.22	0.15	0.15						
Positive attitude to silence															
Openness in communication															
High-low context communication															
Tendency to display emotions													1	220	
Propensity to dishonesty in communication															
Totals/absolute weighted averages	3	804	0.11	0.15	0.05					1	220				
Behaviors: Conflict															
management/negotiation															
Conflict avoidance															
Confrontation															
Accommodation															
Compromising															
Cooperation with opponents in negotiations															
Totals/absolute weighted averages	0	0								0	0				
All behaviors: Overall weighted averages/totals															
	8	2,440	0.22	0.32	0.15										
Attitudes and perceptions: Work-related															
Ethics-avoiding unethical behavior	6	5,876	0.13	0.20*	0.11	0.10	0.29	0.00	0.40	5	1,560	1	1	3	
Exchange ideology (this for that)															
Feedback seeking															
Identification with organization															
Organizational commitment: Affective	3	975	0.08	0.11*	0.08	0.01	0.20	0.07	0.16						
Organizational commitment: Continuance	3	975	0.30	0.42*	0.17	0.26	0.60	0.12	0.72					4	
Organizational commitment: General															
Organizational commitment: Normative	4	1,131	0.11	0.14*	0.07	0.08	0.21	0.14	0.14						
Satisfaction, coworker															
Satisfaction, job satisfaction	4	1,425	0.18	0.24*	0.18	0.04	0.42	-0.10	0.58						
Satisfaction, supervisor	3	1,065	0.11	0.14*	0.09	0.03	0.24	0.02	0.25					3	
Trust															
Totals/absolute weighted averages	23	11,447	0.14	0.16	0.12					5	1,560				
Attitudes and perceptions: Group-related															
Need for affiliation															
In-group favoritism															
Team commitment	4	5,333	0.24	0.37*	0.09	0.32	0.43	0.20	0.53					13	
Independence															
Social avoidance															
Conformity	3	4,483	0.09	0.13*	0.01	0.08	0.17	0.13	0.13						
Teamwork preference	3	134	0.13	0.18*	0.10	0.07	0.30	0.18	0.18	1	205			1	
Totals/absolute weighted averages	10	9,950	0.17	0.26	0.05					1	205				
Attitudes: Conflict management/negotiation															
Concern for others' interests															
Preference for third-party involvement															
Totals/absolute weighted averages	0	0								0	0				

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MAS														
Effect size									Vote count					
<i>k</i>	<i>N</i>	<i>r</i>	ρ	SD_{ρ}	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	#+	#ns	#-	
3	1,088	0.11	0.16*	0.08	0.05	0.27	0.05	0.27						
3	1,088		0.16	0.05					0	0				
3	714	-0.20	-0.22*	0.07	-0.30	-0.14	-0.32	-0.12	0.20					
3	3	714	0.15	0.20*	0.02	0.19	0.22	0.20						
3	804	-0.04	-0.07	0.04	-0.07	0.00	-0.08	-0.06						
		1	3	2,161	0.07	0.10*	0.17	-0.09	-0.29	-0.21	0.41			
12	4,393	0.10	0.13	0.10					0	0				
3	377	-0.22	-0.36*	0.07	-0.44	-0.29	-0.36	-0.36	1	454			1	
3	194	0.09	0.13*	0.03	0.09	0.18	0.13	0.13						
3	194	0.17	0.28*	0.18	0.02	0.54	0.09	0.47						
3	194	0.37	0.58*	0.14	0.38	0.79	0.47	0.69	2	534		1	1	
	5	1,229	-0.07	-0.09*	0.11	-0.19	-0.01	-0.22	-0.04					
16	2,188	0.13	0.20	0.10					3	988				
31	7,669	0.11	0.15	0.10					3	988				
4	5,283	-0.18	-0.25*	0.26	-0.51	-0.01	-0.76	0.26	1	138			1	
3	1,505	-0.14	-0.18*	0.05	-0.24	-0.13	-0.18	-0.18						
1,555	0.02	0.03	0.07	-0.05	0.10	-0.04	0.09							
5	1,417	0.14	0.19*	0.13	0.08	0.30	-0.01	0.38						
706	-0.10	-0.12*	0.11	-0.24	-0.01	-0.30	0.06							
19	10,466	0.14	0.19	0.17					1	138				
3	1,084	0.20	0.29*	0.14	0.13	0.45	0.05	0.53	1	1,501			1	
9,238	0.11	0.15	0.29	-0.01	0.31	-0.42	0.71		2	542	1		1	
3	598	0.43	0.55*	0.04	0.47	0.64	0.55	0.55						
5	1,909	-0.13	-0.17*	0.08	-0.24	-0.09	-0.21	-0.12	1	359			1	
12	3,247	-0.03	-0.05	0.09	-0.08	0.01	-0.18	0.08	1	205	1			
36	16,076	0.11	0.16	0.21					5	2,607				
									1	26			1	
										4	1,145		4	
0	0								5	1,171				

(table continues)

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Table 2 (continued)

Variable	UA										Vote count			
	Effect size													
	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_p</i>	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	#+	#ns	#-
Attitudes: Perceived justice and reward allocation rule preference														
Perceived justice in organization	3	1,258	0.16	0.21*	0.07	0.12	0.29	0.15	0.26					
Equality														
Equity	4	2,739	0.01	0.02	0.08	-0.06	0.00	-0.11	0.14	1	541			1
Need														
Seniority														
Totals/absolute weighted averages	7	3,997	0.06	0.08	0.08					1	541			
Attitudes and perceptions: Leadership style preference														
Charisma														
Directive	6	1,954	0.27	0.36*	0.14	0.27	0.47	0.12	0.00	3	464	1		2
Participative	5	4,862	-0.16	-0.25*	0.04	-0.29	-0.20	-0.25	-0.25					3
Inspirational	7	3,077	0.01	0.02	0.11	-0.07	0.10	-0.15	0.19					6
Transformational	3	4,483	-0.01	-0.01	0.02	-0.05	0.03	-0.01	-0.01					
Preference for leader who stimulates intellectual input														
Preference for paternalism														
Closeness with supervisor														
Totals/absolute weighted averages	21	14,376	0.10	0.14	0.06					3	464			
Attitudes and perceptions: Nonwork-related														
Religiosity														
Nationalism/ethnocentrism														
Family values, importance of family												2	852	1
Family values, work centrality														3
Equality-individual values														
Willingness to seek counseling/professional help														
Acculturation														
Satisfaction, life satisfaction														
Coping active														
Coping passive														
Gender role equality										1	1,080			1
Totals/absolute weighted averages	0	0								3	1,932			
All attitudes and perceptions: Overall weighted averages/totals														
	61	39,770	0.12	0.17	0.08					13	4,702			
Emotions														
Depression														
Anxiety														
Embarrassability														
Totals/absolute weighted averages	0	0								0	0			
Traits														
Agreeableness														
Conscientiousness														
Extraversion														
Neuroticism														
Openness														
Internal locus of control														
External locus of control														
Competitiveness														
Risk liking										5	1,233	1	3	1
Self-esteem														
Self-efficacy														
Totals/absolute weighted averages	0	0								5	1,233			
Performance	8	2,791	0.08	0.10*	0.08	0.05	0.16	0.03	0.18	0	0			
Weighted grand averages/totals														
	73	43,606	0.13	0.18	0.08					19	6,155			

Note. IND = individualism; PD = power distance; UA = uncertainty avoidance; MAS = masculinity; *k* = number of independent samples; *N* = number of individuals; ρ = meta-analytic effect size, *significant at $p < .05$; *SD_p* = standard deviation of the effect size; CoI_{l/h} = lower and upper boundaries of confidence intervals; CrI_{l/h} = lower and upper boundaries of credibility intervals; #+ = number of studies that showed statistically significant positive effect; #ns = number of studies that showed no statistically significant effect; #- = number of studies that showed statistically significant negative effect.

MAS														
Effect size									Vote count					
<i>k</i>	<i>N</i>	<i>r</i>	ρ	SD_{ρ}	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	#+	#ns	#-	
3	1,061	-0.03	-0.04	0.05	-0.10	0.02	-0.04	-0.04						
3	642	-0.08	0.00	0.10	-0.11	0.11	-0.06	0.05	1	91				1
9	3,518	-0.09	-0.13*	0.09	-0.18	-0.07	-0.24	-0.01	3	650	2	1		
15	5,221	0.08	0.10	0.08					4	741				
10	1,907	-0.10	-0.12*	0.10	-0.18	-0.06	-0.21	-0.03						
4,930	-0.01	-0.01	0.03	-0.05	0.03	-0.01	-0.01	2	410	2				
2,718	-0.12	-0.15*	0.10	-0.23	-0.08	-0.32	0.02							
3	4,483	0.05	0.08*	0.04	0.03	0.12	0.08	0.08						
3	886		0.21*	0.12	0.08	0.34	0.04	0.37						
25	14,924	0.05	0.08	0.06					2	410				
	19	8,741	-0.14	-0.20*	0.12	-0.26	-0.15	-0.41	0.01					
	5	2,407	0.24	0.33*	0.17	0.18	0.47	0.02	0.63					
4,959	1	-0.35	-0.44*	0.11	-0.56	-0.32	-0.64	-0.24			1	205	1	
3	6,890		0.26	0.43	-0.23	0.75	-0.59	0.00	2	2,105				2
30	22,997	0.15	0.28	0.22					3	2,310				
125	69,684	0.12	0.16	0.18					20	7,377				
	0	0							0	0				
5	4,304	-0.18	-0.27	0.30	-0.55	0.02	-0.89	0.35						
5	1,304	0.16	0.24*	0.17	0.05	0.39	-0.10	0.57						
7	3,711	0.10	0.14*	0.16	0.01	0.26	-0.16	0.44						
3														
7	3,711	0.11	0.15*	0.13	0.05	0.26	-0.10	0.41						
									4	1,021	4			
4	687	0.19	0.26*	0.09	0.16	0.36	0.26	0.26						
4	2,281	0.18	0.23*	0.01	0.21	0.24	0.23	0.23						
35	15,998	0.14	0.20	0.17					4	1,021				
10	2,603	0.01	0.01	0.09	-0.05	0.06	-0.09	0.11	0	0				
196	94,653	0.12	0.19	0.16					4	1,021				

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Table 3
Main Effects of Culture, Group Level

Variable	IND										PD												
	Effect size					Vote count					Effect size					Vote count							
	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_p</i>	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	#+	#ns	#-	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_p</i>	CoI _l	CoI _h	CrI _l	CrI _h
Attitudes and perceptions																							
Group cohesiveness	10	965	-.10	-0.11*	0.08	-0.17	-0.04	-0.37	0.03														
Behaviors																							
Compromising	3	254	-.16	0.19*	0.05	0.07	0.30	0.44	-0.06														
Cooperation in group	6	301	-.37	-0.39*	0.21	-0.48	-0.29	-0.73	-0.04	2	532			2	2	58	.36	0.37*	0.05	0.14	0.59	0.19	0.55
Entrepreneurship	3	597	.12	0.19*	0.14	0.03	0.33	-0.03	0.41														
Totals/absolute weighted averages	12	1,152	.19	0.242	0.15					2	532			2	58	.36	0.37	0.05					
Performance																							
Joint gain in negotiation	3	265	-.33	-0.35*	0.09	-0.45	-0.25	-0.35	-0.35	1			1										
Group performance	9	832	-.13	-0.15*	0.14	-0.24	-0.06	-0.28	-0.02	1	156			1	3	211	-.09	-0.11*	0.10	-0.27	0.06	-0.11	-0.11
Totals/absolute weighted averages	12	1,097	.18	0.20	0.13					1	156			3	211	.09	0.11	0.10					
Weighted grand averages/totals	34	3,214	.16	0.188	0.12					4	688			5	269	.15	0.17	0.08					

Note. IND = individualism; PD = power distance; UA = uncertainty avoidance; MAS = masculinity; *k* = number of available data points (reported independent effect sizes); *N* = number of groups or firms used to obtain the effect size; ρ = meta-analytic effect size, *significant at $p < .05$; *SD_p* = standard deviation of the effect size; CoI_{l/h} = lower and upper boundaries of confidence intervals; CrI_{l/h} = lower and upper boundaries of credibility intervals; #+ = number of studies that showed statistically significant positive effect; #ns = number of studies that showed no statistically significant effect; #- = number of studies that showed statistically significant negative effect.

the effect of general mental ability on behaviors ($\rho = 0.25$), individualism had an effect comparable to that of general mental ability on behaviors such as organizational citizenship ($\rho = -0.21$), helpfulness ($\rho = -0.20$), and conflict resolution styles (up to $\rho = 0.30$). Similarly, uncertainty avoidance was strongly but negatively related to innovation ($\rho = -0.41$), and masculinity had a strong effect on conflict management preferences (up to $\rho = 0.58$, $k = 3$) and communication style (up to $\rho = 0.22$, $k = 3$).

In contrast, although compared to personality, general mental ability, and demographics, cultural values seem to be a stronger predictor of emotions, attitudes/perceptions, and behavior overall, there were some notable exceptions. For example, regardless of the dimension, cultural values were found to be overall only modestly related to outcomes in the organizational justice block (individualism, $\rho = -0.10$; power distance, $\rho = 0.14$; uncertainty avoidance, $\rho = 0.08$; masculinity, $\rho = 0.10$). Similarly, the link was rather weak between individualism and important organizational behaviors such as absenteeism ($\rho = 0.05$), turnover ($\rho = 0.05$), and effort ($\rho = -0.11$) and attitudes such as leadership style preferences ($\rho = 0.00$ for transformational leadership; $\rho = -0.07$ for preference for intellectual input stimulation, $k = 3$) and for anxiety and depression ($\rho = -0.11$). Thus, for these organizationally relevant outcomes, our results demonstrate that individual attributes, especially personality and general mental ability, may be relatively stronger predictors than cultural values.

In summary, at the individual level of analysis, individualism had the strongest positive associations with avoiding unethical behavior ($\rho = 0.39$) and preference for paternalistic leadership ($\rho = 0.46$, $k = 3$) and the strongest negative associations with need for affiliation ($\rho = -0.37$), concern for other's interests in conflict management ($\rho = -0.37$), and embarrassability ($\rho = -0.42$). Power distance had the strongest positive associations with continuance ($\rho = 0.30$) and normative organizational commitment

($\rho = 0.39$), preference for directive leadership ($\rho = 0.33$), and religiosity ($\rho = 0.36$) and the strongest negative associations with both avoiding unethical behavior ($\rho = -0.38$) and feedback seeking ($\rho = -0.26$, $k = 3$). Uncertainty avoidance had the strongest positive associations with team commitment ($\rho = 0.37$) and preference for directive leadership ($\rho = 0.36$) and the strongest negative associations with innovation ($\rho = -0.41$) and preference for participative leadership ($\rho = -0.25$). Finally, masculinity-femininity had the strongest positive associations with a preference for a compromise conflict management style ($\rho = 0.58$, $k = 3$) and social avoidance ($\rho = 0.55$, $k = 3$) and the strongest negative associations with a preference for an avoidance conflict management style ($\rho = -0.36$, $k = 3$) and the value of individual equality ($\rho = -0.44$, $k = 3$).

At the group level of analysis, individualism had the strongest positive association with a preference for a compromising conflict management style ($\rho = 0.19$, $k = 3$) and the strongest negative association with cooperation in groups ($\rho = -0.39$). Cooperation in groups was also strongly positively related to power distance ($\rho = 0.37$, $k = 2$) and uncertainty avoidance ($\rho = 0.37$, $k = 2$) and was strongly negatively related to masculinity ($\rho = -0.45$, $k = 2$).

At the country level of analysis, individualism had the strongest positive associations with innovation ($\rho = 0.65$, $k = 3$), wealth ($\rho = 0.70$), life satisfaction ($\rho = 0.64$), and income equality ($\rho = 0.64$) but the strongest negative associations with importance of family ($\rho = -0.55$, $k = 3$) and corruption ($\rho = -0.84$). Power distance had a strong positive association with corruption ($\rho = 0.83$) and agreeableness ($\rho = 0.46$, $k = 2$) but the strongest negative associations with openness to experience ($\rho = -0.54$, $k = 2$) and income equality ($\rho = -0.60$). Uncertainty avoidance had the strongest positive associations with neuroticism ($\rho = 0.59$) and corruption ($\rho = 0.43$) but the strongest negative associations

UA									MAS								
Effect size									Effect size								
<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD</i> _{ρ}	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD</i> _{ρ}	CoI _l	CoI _h	CrI _l	CrI _h
2	58	.36	0.37*	0.16	0.14	0.60	0.61	0.13	2	58	-.44	-0.45*	0.15	-0.68	-0.23	-0.57	0.34
2	58	.36	0.37	0.16					2	58	.44	0.45	0.15				
2	91	.23	0.23*	0.15	0.06	0.49	0.28	0.28									
2	91	.23	0.28	0.15					0	0							
4	149	.28	0.32	0.16					2	58	.44	0.45	0.15				

with innovation ($\rho = -0.45, k = 3$) and life satisfaction ($\rho = 0.49$). Finally, masculinity had the strong positive associations with neuroticism ($\rho = 0.29$) and corruption ($\rho = 0.29$) but the strongest negative association with gender role equality ($\rho = -0.50, k = 2$).

Turning to our hypotheses, consistent with Hypothesis 1 and using a series of correlation difference tests for independent samples ($p < .01$), we found that the relationship between cultural values and emotions was overall significantly stronger ($\rho = 0.27$) than that between cultural values and attitudes and perceptions ($\rho = 0.20$), behaviors ($\rho = 0.15$), or job performance ($\rho = 0.03$). Also, these results showed statistically stronger relationships for cultural values with attitudes/perceptions and behaviors than with job performance. Limited data availability on the effects of cultural values on emotions unfortunately allowed for testing and confirming the hypothesis for individualism only. On the other hand, the hypothesized diminishing of relationship strength across bandwidth proximity held true, with the effect of cultural values being the strongest on attitudes and perceptions and weakest on performance along all four dimensions. The only exception was uncertainty avoidance, which correlated significantly more strongly with behaviors ($\rho = 0.32$) than with attitudes ($\rho = 0.17$). However, this unexpected finding was largely determined by a very strong relationship between uncertainty avoidance and innovativeness. As expected, the direct relationship between cultural values and performance was very close to zero for all dimensions, again with the exception of uncertainty avoidance ($\rho = 0.10$), which was still the weakest correlation for that dimension. Unfortunately, limited data availability for the group/organization and national levels made it impossible to conduct a meaningful comparison of the strength of the relationships between cultural values and specific outcomes.

Moderators of Cultural Value Main Effects

Given our focus on main effects of cultural values, it is beyond the scope of the present study to provide a detailed analysis of the credibility intervals reported in Tables 2–4. However, a number of reported credibility intervals include zero, suggesting limited generalizability of main effects and highlighting the need for moderator analyses. Due to data availability, the moderator analysis could be meaningfully conducted only for individual-level data. The data points representing unique outcomes that were excluded from the analysis of direct effects of cultural values (as they could not be grouped with any of the well-represented categories) were relevant for the moderator analysis and thus were used with the rest of the data.

The theorized moderating effects were tested by evaluating the strength of the relationship between the moderators and the effect size of cultural values on different types of outcomes. Essentially, the moderator coefficients are the weighted average product-moment correlations between the moderator value and the absolute weighted correlation between cultural values and organizational outcomes. In other words, the dependent variable in our moderator analysis is the degree of correlation between culture and organizational outcomes. The results of the moderator analysis were highly consistent across different cultural values and types of outcomes. Therefore, we provide only the overall results, as opposed to separate sets of moderator indices for each cultural value and type of outcome (see Table 6 for the results). Higher scores represent tight cultures; lower scores represent loose cultures.

All moderation hypotheses regarding demographics were supported. For example, the effect of cultural values was found to be: significantly stronger for older, rather than younger, respondents

Table 4
Main Effects of Culture, Country Level

Variable	IND									PD								
	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_p</i>	CoI _l	CoI _h	CrI _l	CrI _h	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_p</i>	CoI _l	CoI _h	CrI _l	CrI _h
Attitudes and perceptions																		
Satisfaction, supervisor	5	180	-.23	-.30*	0.19	-.47	-.11	-.49	-.10									
Conformity	3	58	-.40	-.42*	0.27	-.73	-.11	-.80	-.04	3	58	.40	0.42*	0.17	0.11	0.73	0.12	0.70
Family values, importance of family	3	72	-.42	-.55*	0.34	-.97	-.14	-1.00	-.06	3	78		0.34*	0.16	0.10	0.57	0.34	0.34
Satisfaction, life satisfaction	6	205	.46	0.64*	0.15	0.53	0.76	0.64	0.64	5	163	-.31	-.43*	0.31	-.71	-.15	-.89	-.03
Totals/absolute weighted averages	17	515	.37	0.478	0.24					11	299	.25	0.397	0.21				
Traits																		
Agreeableness	2	72	-.30	-.42*	0.14	-.59	-.24	-.42	-.42	2	72	.33	0.46*	0.05	0.40	0.51	0.46	0.46
Conscientiousness	2	72	-.20	-.28*	0.13	-.47	-.10	-.28	-.28	2	72	.28	0.38	0.33	-.10	0.86	-.15	0.92
Extraversion	4	126	.36	0.51*	0.33	0.12	0.90	-.03	1.00	4	126	-.34	-.48*	0.24	-.71	-.24	-.68	-.27
Neuroticism	4	126	-.09	-.12	0.27	-.40	0.15	-.38	0.13	4	126	.29	0.39*	0.19	0.20	0.58	0.39	0.39
Openness	2	72	.38	0.52*	0.10	0.38	0.66	0.52	0.52	2	72	-.39	-.54*	0.04	-.81	-.27	-.54	-.54
External locus of control	4	67	-.36	-.46*	0.22	-.76	-.27	-.46	-.46									
Totals/absolute weighted averages	18	535	.27	0.37	0.21					14	468	.32	0.47	0.20				
Nation level outcomes																		
Economic growth	6	224	-.07	-.09	0.25	-.29	0.12	-.42	0.24	6	193	.11	0.14	0.47	-.25	0.53	-.73	1.00
Wealth	19	646	.58	0.70*	0.44	0.65	0.75	-.14	1.00	20	633	-.34	-.41*	0.59	-.67	-.14	-.10	0.72
Human rights	8	315	.40	0.47*	0.28	0.27	0.68	0.00	0.95	7	254	-.38	-.45*	0.18	-.59	-.31	-.59	-.31
Corruption	5	19	-.70	-.84*	0.02	-.93	-.76	-.84	-.84	5	196	.70	0.83*	0.03	0.75	0.92	0.83	0.83
Gender role equality	5	222	.25	0.29*	0.23	0.09	0.50	-.04	0.63	4	174	-.42	-.49*	0.17	-.65	-.32	-.66	-.31
Innovation	3	86	.54	0.65*	0.27	0.35	0.95	0.23	1.00									
Income equality	3	128	.53	0.64*	0.14	0.45	0.82	0.46	0.82	4	148	-.50	-.60*	0.07	-.67	-.52	-.60	-.60
Inflation	3	127	-.06	-.07	0.07	-.16	0.01	-.07	-.07									
Totals/absolute weighted averages	52	1,767	.40	0.469	0.21					46	1,598	.39	0.46	0.25				
Weighted grand averages/totals	87	2,817	.37	0.47	0.22					71	2,365	.36	0.45	0.24				

Note. IND = individualism; PD = power distance; UA = uncertainty avoidance; MAS = masculinity; *k* = number of available data points (reported independent effect sizes); *N* = number of national samples used to obtain the effect size; ρ = meta-analytic effect size, *significant at $p < .05$; *SD_p* = standard deviation of the effect size; CoI_{l/h} = lower and upper boundaries of confidence intervals; CrI_{l/h} = lower and upper boundaries of credibility intervals; #+ = number of studies that showed statistically significant positive effect; #ns = number of studies that showed no statistically significant effect; #- = number of studies that showed statistically significant negative effect.

($r = .19$), supporting Hypothesis 2a; significantly weaker for students, rather than for managers and employees ($r = -.16$), supporting Hypothesis 2b; significantly stronger for men rather than women ($r = .23$), supporting Hypothesis 2c; and significantly stronger for those with more, rather than fewer, years of education ($r = .28$), supporting Hypothesis 2d.

The moderating effects of the data source was the strongest moderating effect found in our study ($r = .39$). Using cultural value scores from secondary data sources (i.e., Hofstede's 1980a national indices) was associated with less significant findings, and using original data to quantify cultural values led to stronger findings, supporting Hypothesis 3.

Finally, the moderating effect of cultural tightness-looseness (Gelfand et al., 2006) was tested with a mix of individual and national-level data. National cultural tightness-looseness scores were taken from Gelfand, Raver, et al. (2008) and matched with the data in our meta-analytic data set. A substantial portion of the studies in our data set used multinational samples and did not provide separate results for subsamples representing each country. In these cases, it was impossible to match cultural tightness-looseness scores with the coefficients of association between cultural values and outcomes. However, about a third of the studies reported findings for each country separately or used a unicultural

research design allowing for matching data with the national scores for cultural tightness-looseness and testing the moderating effect of this construct. Cultural values were found, consistent with Hypothesis 4, to have a significantly stronger effect on outcomes in culturally tighter ($r = .28$), rather than looser, countries. Please see Table 7 for a summary of our findings.

Discussion

Despite the publication of the original book by Hofstede (1980a) almost 30 years ago and of his updated book in 2001, to our knowledge, there has been no attempt to comprehensively, quantitatively assess the impact of the cultural value dimensions included in his framework. As a result, questions about the overall predictive power of Hofstede's cultural value dimensions and what factors might affect this power have gone largely unanswered. Thus, we attempted to quantitatively review a large number of empirical studies that have incorporated Hofstede's cultural value dimensions over the last three decades. The primary motivation for our study was twofold and included a more accurate understanding of the (a) predictive power of the cultural values as main effects on organizationally relevant outcomes and (b) factors (i.e., moderators) that determine when cultural values matter most (Gibson et

UA									MAS								
<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_p</i>	CoI _i	CoI _h	CrI _i	CrI _h	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD_p</i>	CoI _i	CoI _h	CrI _i	CrI _h
3	57	.18	0.26*	0.21	0.02	0.51	0.26	0.26									
4	80	-.35	-0.49*	0.37	-0.85	-0.12	-0.98	0.00	3	76	-.11	-0.16*	0.07	-0.24	-0.08	-0.16	-0.16
7	137	.28	0.39	0.29					3	76	.11	0.16					
2	72	-.21	-0.29	0.37	-0.83	0.26	-0.92	0.35	2	72	-.02	-0.02	0.12	-0.19	0.14	-0.02	-0.02
2	72	.03	0.04	0.35	-0.46	0.53	-0.49	0.57	2	72	-.02	-0.03	0.10	-0.18	0.12	-0.03	-0.03
4	126	.01	0.01	0.28	-0.28	0.30	-0.30	0.33	4	126	.01	0.01	0.20	-0.20	0.22	0.01	0.01
4	126	.43	0.59*	0.20	0.38	0.81	0.47	0.71	4	126	.21	0.29	0.38	-0.10	0.68	-0.33	0.91
2	72	.04	0.06	0.14	-0.15	0.26	0.06	0.06	2	72	.10	0.13	0.01	-0.19	0.45	0.13	0.13
14	468	.16	0.22	0.24					14	468	.08	0.11	0.17				
5	174	-.07	-0.08	0.41	-0.46	0.29	-0.82	0.65	4	141	-.06	-0.07	0.23	-0.32	0.17	-0.34	0.19
11	382	-.20	-0.23*	0.34	-0.44	-0.03	-0.79	0.33	13	664	.09	0.11*	0.18	0.01	0.22	-0.07	0.29
5	259	-.13	-0.16	0.62	-0.71	0.40	-1.00	1.00	5	196	.25	0.29*	0.20	0.12	0.47	0.12	0.46
5	196	.36	0.43*	0.05	0.40	0.46	0.43	0.43	2	71	-.43	-0.50*	0.45	-0.72	-0.27	0.34	
3	86	-.38	-0.45*	0.23	-0.71	-0.20	-0.67	-0.23	3	128	-.11	-0.13	0.16	-0.32	0.05	-0.13	-0.13
3	128	-.21	-0.25*	0.10	-0.37	-0.14	-0.25	-0.25	3	128	-.11	-0.13	0.16	-0.32	0.05	-0.13	-0.13
3	148	.32	0.38*	0.28	0.05	0.71	-0.10	0.86									
35	1,373	.22	0.26	0.29					27	1,200	.13	0.22	0.24				
56	1,978	.21	0.26	0.28					44	1,744	.12	0.15	0.21				

al., 2009). Below we discuss the implications of our review, with a focus on what we know now that we have analyzed almost 600 studies examining Hofstede's cultural value dimensions. We also discuss extensions to the only other comprehensive meta-analytic review of one of the cultural value dimensions contained in Hofstede's framework, individualism–collectivism, which was published over eight years ago (Oyserman et al., 2002).

Theoretical Implications

The implications of our meta-analytic findings for theory can be categorized into those dealing with the predictive power of the cultural values as main effects and the moderators of cultural value main effects, as consistent with the theoretical framing in our introduction.

The predictive power of the cultural values as main effects on organizationally relevant outcomes. Our first research question asked whether or not there were any significant differences in the predictive power of the four cultural values overall. The results demonstrated that, on the whole, there were very few statistically significant differences regarding the predictive power of the values at the individual level of analysis. Despite the overwhelming popularity of individualism–collectivism in previ-

ous research (Kirkman et al., 2006; Oyserman et al., 2002), our results showed that it did not have any meaningful predictive power differences compared to the other three values, and its overall predictive power was about average ($\rho = 0.18$). However, there was a substantially higher variation in predictive power at the group/organization and country levels of analysis. For example, individualism was found to be the weakest predictor at the group/organization level of analysis, and power distance was almost as strong a predictor as individualism at the national level. This finding must be tempered, however, by the limited data availability for the analyses at these aggregate levels.

Our findings support recent researcher calls to incorporate a wider array of cultural values beyond individualism–collectivism in cross-cultural organizational behavior and psychology studies (Earley & Gibson, 1998; Gelfand et al., 2007; Kirkman et al., 2006; Tsui et al., 2007). Of course, such choices must be theoretically driven by what researchers attempt to predict. However, we have empirically demonstrated that, overall, there is no reason to believe that individualism–collectivism will be a stronger predictor than other cultural values for most outcomes and that the cultural values have similar predictive power, at least at the individual level of analysis.

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Table 5
Meta-Analytic Findings for Predictive Validity of Personality, Cognitive Abilities, and Demographic Characteristics

Variable	Emotions				Attitudes				Behaviors				Performance				Overall ^a			
	<i>r</i>	<i>K</i>	ρ	<i>K</i>	<i>r</i>	<i>K</i>	ρ	<i>K</i>	<i>r</i>	<i>K</i>	ρ	<i>K</i>	<i>r</i>	<i>K</i>	ρ	<i>K</i>	<i>r</i>	<i>K</i>	ρ	<i>K</i>
Culture, overall	.20	3	0.27	3	.13	43	0.20	43	.11	23	0.15	23	.03	1	0.03	1	.13	70	0.18	70
Individualism			0.27	3	.16	43	0.23	43	.11	23	0.14	23	.02	1	0.02	1	.14	67	0.20	70
Power distance					.11	20	0.16	20	.11	5	0.15	5	.01	1	0.01	1	.11	26	0.15	26
Uncertainty avoidance					.12	15	0.17	15	.22	3	0.32	3	.08	1	0.10	1	.13	19	0.19	19
Masculinity					.12	23	0.18	23	.11	10	0.15	10	.01	1	0.01	1	.11	34	0.17	34
Personality, overall	.15	5	0.20	14	.13	89	0.18	49	.10	36	0.14	21	.09	103	0.12	81	.11	233	0.15	165
Neuroticism	.02	1	0.19	4	.15	17	0.23	12	.10	4	0.12	5	.10	20	0.11	16	.12	42	0.16	37
Extraversion	.13	1	0.22	4	.15	18	0.18	9	.07	6	0.11	3	.09	20	0.12	17	.11	45	0.15	33
Openness	.12	1	0.14	1	.13	17	0.13	8	.05	5	0.06	3	.07	20	0.07	16	.09	43	0.09	28
Agreeableness	.14	1	0.08	1	.11	19	0.18	10	.10	13	0.12	5	.08	23	0.12	16	.10	56	0.14	32
Conscientiousness	.33	1	0.35	1	.13	18	0.13	10	.14	8	0.28	5	.14	20	0.19	16	.14	47	0.19	32
Demographics, overall	.08	4	0.09	14	.06	8	0.10	17	.09	16	0.13	6	.08	14	0.09	8	.08	42	0.10	45
Age			0.12	2			0.20	4	.11	3	0.14	3	.09	8	0.04	1	.10	11	0.15	10
Work experience					.07	2	0.11	3	.09	3	0.16	2	.09	1	0.11	2	.08	6	0.12	7
Gender	.08	2	0.09	9	.07	2	0.09	5	.08	10			.04	3	0.12	1	.07	17	0.09	15
Education	.08	2	0.11	3	.03	1	0.04	2									.06	3	0.08	5
Race					.07	3	0.08	3			0.09	1	.10	2	0.11	4	.08	5	0.10	8
General cognitive ability	.07	1					0.09	1	.17		0.25	4	.33	26	0.54	21	.32	27	0.48	26

Note. *r* = absolute average correlation weighted by *k* (the number of meta-analytic effect sizes reported); ρ = absolute average correlation corrected for measurement unreliability weighted by *k* (the number of meta-analytic effect sizes); *K* = number of meta-analytic effect sizes summarized: For the present study (culture), *K* represents the number of outcomes for which meta-analytic effect sizes were calculated; for the other meta-analyses (personality, demographics, general cognitive ability), it represents the number of meta-analytic effect sizes reported in all meta-analytic papers included in the summary falling in the broad category. Most studies reported both *r* and ρ .

^a For the present study, the overall weighted *r* and *r* are weighted by number of studies (*k*) and thus are slightly different than those reported in Table 2, which were weighted by the number of participants (*N*).

Our second research question involved the comparison of the predictive power of the cultural values versus that of other individual-level attributes, such as personality traits, general mental ability, and demographics, on organizationally relevant outcomes. As stated in our introduction, Kirkman et al. (2006) noted in their qualitative review that the cultural values in general explained low amounts of variance in outcomes. Indeed, the overall absolute average effect size for cultural values of $\rho = 0.18$ at the individual level of analysis can be characterized as relatively low using Cohen and Cohen's (1983) effect size heuristic. Over 20 years ago, a meta-analysis of the job satisfaction–performance relationship yielded almost the same effect size (i.e., average uncorrected weighted meta-analytic correlation of .17), leading researchers to conclude that the relationship was an “illusory correlation” (Iaffaldano & Muchinsky, 1985, p. 269). For an updated meta-analytic examination of this relationship, see Judge, Thoresen, Bono, and Patton (2001).

With an overall absolute effect size of 0.18, the question must be asked whether it is time to abandon research on cultural values as explanatory mechanisms for organizationally relevant outcomes. Has the time truly come to “expand beyond using culture as meaningful differentiators” of outcomes (Tsui et al., 2007, p. 464)? Are cultural values too broad and the approach to studying them too deterministic to be useful in future research? If our meta-analytic review had stopped with examining the overall effect size for cultural values, the answer would most likely be “yes.” However, given our comparison of effect sizes to other individual predictors of employee outcomes and our examination of moderating factors, this conclusion is overly simplistic and premature.

For example, our results showed that the amounts of variance explained by cultural values are as much as (and sometimes more than) that explained by individual differences such as the Big Five personality traits (e.g., Barrick & Mount, 1991), demographics (e.g., Eagly & Karau, 1991), and general mental ability (e.g.,

Table 6
Moderator Analysis: Overall Weighted Average Moderating Effects

Variable	Age	Student ^a	Gender ^b	Education	Data source ^c	Cultural tightness ^d
Moderation effect, <i>r</i>	.19**	-.16**	.23**	.28**	.39**	.28**
<i>k</i>	1,812	2,002	1,902	1,798	2,147	797

Note. Moderator effect index (*r*) represents the overall absolute weighted correlation between moderator and absolute weighted unreliability corrected correlation (meta-analytic effect size) between culture and organizational outcomes.

^a Student = 1, otherwise = 0. ^b Male = 1, otherwise = 0. ^c Original data = 1, data from external source = 0. ^d Higher scores represent tight cultures; lower scores represent loose cultures.

** $p < .01$.

Table 7
 Summary of Meta-Analytic Findings

Research Question(RQ)/Hypothesis(H)	Finding
<i>RQ1</i> : Comparative predictive power of different cultural values	When the predictive power of the four cultural value dimensions was compared across all outcomes, there were no significant differences at the individual level; moderate (but not significant) differences at the group level; and strongly significant differences at the country level.
<i>RQ2</i> : Comparative predictive power of culture vs. personality, demographics, general cognitive ability	At the individual level, in general, the predictive power of the cultural values on outcomes was as strong as that of demographics, personality traits, and cognitive ability (although the results do depend on the specific outcome in question).
<i>H1</i> : Effect of culture on emotions vs. attitudes vs. behaviors vs. job performance	The predictive power of the cultural values was strongest for emotions, followed by attitudes and perceptions, then behaviors, and finally job performance.
<i>H2a</i> : Moderating effect of age	The predictive power of the cultural values was significantly stronger for older, rather than younger, respondents.
<i>H2b</i> : Moderating effect of student/employee status	The predictive power of the cultural values was significantly stronger for managers and employees, rather than students.
<i>H2c</i> : Moderating effect of gender	The predictive power of the cultural values was significantly stronger for men, rather than women.
<i>H2d</i> : Moderating effect of education	The predictive power of the cultural values was significantly stronger for those with more, rather than fewer, years of education.
<i>H3</i> : Moderating effect of data source	The predictive power of the cultural values was significantly stronger for studies using primary, rather than secondary, data.
<i>H4</i> : Moderating effect of cultural tightness/looseness	The predictive power of the cultural values was significantly stronger for culturally tighter, rather than looser, countries.

Hunter & Schmidt, 1998) with respect to specific outcomes. Although cultural values explained relatively low amounts of variance in outcomes such as job performance, absenteeism, and turnover, relatively larger effects sizes were detected for outcomes such as organizational commitment, organizational citizenship behavior, organizational identification, team-related attitudes and perceptions, receptivity to certain leadership styles, and feedback seeking. Researchers interested in better understanding variance in certain employee outcomes now have evidence that cultural values are just as meaningful explanatory factors as are other individual differences such as personality traits, demographics, or general mental ability.

Another reason that the predictive power of the cultural values is relatively low in general might be due to the theoretical contention that power is typically enhanced when the bandwidths of predictors and criteria are matched (Campbell, 1990). Because values are considered broad tendencies (Rokeach, 1973), they may be ill suited for predicting very specific behavioral or attitudinal outcomes at the individual level. Thus, predictive power may be enhanced when researchers better match the bandwidths of cultural values and outcomes. We have argued that cultural values would have stronger predictive power for relatively broader outcomes, like emotions, than for work-related attitudes and perceptions, behaviors, and job performance. Indeed, the relationship between cultural values and emotions was stronger than that with the other outcomes for three of the four dimensions (uncertainty avoidance had a smaller number of studies, thereby clouding the results). Also, in line with the value–attitude–behavior hierarchy framework (Homer & Kahle, 1988), our meta-analytic results support the notion that values are more proximally related to attitudes and perceptions than to behaviors and more proximally related to behaviors than to job performance. Thus, differential predictive power is also likely related to the proximal–distal nature of outcomes.

Moderators of cultural value effects. Another of our major purposes in the meta-analysis was to examine several theoretically

supported moderators of cultural value effects to determine whether or not the predictive power of the cultural values depends on various contingency factors. Gelfand, Leslie, and Fehr (2008) identified the examination of moderators of cultural value effects as one of the major needs in the cross-cultural psychology and organizational behavior fields. We examined several demographic variables, including the nature of the sample (managers/employees vs. students) and respondent age, sex, and years of education. As we have argued, the predictive power of the cultural values was stronger for managers/employees than for students, older rather than younger respondents, men rather than women, and those with more rather than less education. Thus, these factors could be viewed as cultural amplifiers (Gelfand, Leslie, & Fehr, 2008), strengthening the effects of cultural values. Our findings extend the conclusions of Oyserman et al. (2002), who found larger effect sizes for individualism for working adults than for students when comparing Japanese and U.S. data sets. However, Oyserman et al. were unable to consider other moderators and values due to a lack of sample size and, again, their sole focus on individualism–collectivism. Thus, we provide the first comprehensive quantitative examination of demographic moderators of all four of Hofstede's (1980a) original cultural values.

Our finding of significant effects for various demographic moderators has several implications for cross-cultural researchers. First, demographic moderators might help explain why researchers may find significant effects for cultural values for a specific outcome in one study and fail to find such effects in another. If, for example, a particular sample is composed of primarily younger respondents who are female and in college (i.e., typical sample characteristics of the many studies that used undergraduate psychology students), the results of testing cultural value effects are likely to be much more conservative than those obtained with a sample of older, male, working managers. Thus, researchers should always evaluate their cultural value findings in relation to the nature of their samples. Second, our findings for sex differences reinforce previous research that has found stronger linkages

between individual norms and work-related outcomes for men than for women (Farh et al., 1997; Lee et al., 2000) and other research that has argued for differences in socialization and self-identity processes across gender (Gilligan, 1982).

Another moderator that we argued would affect the predictive power of cultural values is the source of the data used. As discussed, existing studies of cultural values used either primary data in the form of surveys collected from actual respondents or secondary data based on assignment of country scores to study participants. In line with our prediction, we found that the predictive power of the cultural values was higher for studies using primary, compared to secondary, data. Assigning country scores to individuals amounts to taking country-level cultural value measure operationalizations and trying to fit them into individual or group/organizational studies. Again, our findings suggest that this should be avoided. One exception was for studies that assigned country scores for nation-level studies. However, this represents a closer match between theory and operationalization of cultural values at the country level of analysis.

Another theoretically supported moderator of cultural value effects was the construct of cultural tightness–looseness. Gelfand et al. (2006) argued that variance in cultural values would be lower in tighter than in looser societies. We argued, based on their line of reasoning, that individuals in culturally tighter societies would have much less flexibility in the expression of their cultural values and outcomes, and thus there would be a stronger relationship between cultural values and outcomes in culturally tighter, rather than looser, societies. As predicted, our meta-analytic results supported this argument. To our knowledge, we are the first to empirically verify the theoretical arguments of Gelfand et al. (2006) and extend them to relationships involving Hofstede's (1980a) cultural value dimensions. Thus, in addition to considering demographics and data source, researchers will need to interpret their findings for cultural values in light of the cultural tightness–looseness of the countries in which their samples originate (Leung & Ang, 2009). Our meta-analytic findings might also address conflicting findings in previous qualitative reviews (Gelfand et al., 2007; Tsui et al., 2007). For example, Kirkman et al. (2006) found that in the few studies that examined the same relationships involving cultural values in different countries, the effects are often different and sometimes contradictory. The cultural tightness–looseness findings in our study might help researchers interpret these differences.

Managerial Implications

Taking into account the number of managers worldwide who have been exposed to Hofstede's (1980a) cultural value framework over the last 30 years in universities and executive education settings, we believe our findings will be of interest to those who wish to fine-tune their efforts to use cultural value differences to better understand employee outcomes. For example, the use of personality instruments and other individual difference indicators has been increasing over the last two decades, as human resource managers attempt to better use individual differences to more accurately select and promote employees in organizations. Our finding that cultural values are just as robust as personality traits and demographics in predicting certain individual outcomes (e.g., organizational commitment, identification, and citizenship behav-

iors; team-related attitudes and perceptions; feedback-seeking behavior) may suggest potential use in employee selection systems. However, more work is needed in this area, as very little research has actually examined cultural values specifically in employee selection settings.

Second, our examination of moderators also has implications for managers wishing to better understand when cultural values matter most (Gibson et al., 2009). For example, the predictive power of cultural values is higher for managers/employees than for students, which should strengthen managers' confidence in using cultural values as predictors. Cultural values also have stronger effects for respondents who are older, rather than younger, and male, rather than female, and for those with more years of education. Although managers should clearly avoid the use of cultural value measures as selection or promotion tools for only certain groups, these findings at least give managers some understanding of when cultural values may matter most. Our results suggest that managers should have more confidence in using cultural value measures when certain emotional responses, beliefs, and attitudes are critical to the position. Furthermore, culture-focused selection tools may work better for older, male, and more educated respondents. Our finding that primary versus secondary data yielded higher predictive power for the cultural values should warn managers not to rely on country scores but to survey their employees to determine individual cultural value profiles. Finally, our findings for cultural tightness–looseness will help managers determine when to attend more to cultural values. When managers operate in culturally tighter societies, such as Pakistan, Malaysia, India, or Singapore, assessing employees' cultural values will likely yield more precise predictions for employee outcomes. In contrast, managers in culturally looser countries, such as the United States, Israel, Hungary, or Ukraine, may wish to supplement their cultural value measures with other important individual difference predictors.

Limitations

The major limitation of the present meta-analysis is commensurability, because there is always tension between size and method variance. As researchers become more inclusive, they are rewarded with larger, more complete data sets, but they are penalized for having less precise constructs. We aimed to err conservatively—that is, to exclude studies except those that were extremely similar—but a case can be made for different standards. For example, the World Database of Happiness has been aggregated in various ways (Diener, Diener, & Diener, 1995; Steel & Ones, 2002; Veenhoven, 1993), which has led researchers to make slightly different decisions regarding commensurability (though they have generated very similar results).

Second, our data set, albeit fairly large, does not represent each data category equally well. As noted earlier, we had quite a few data sets describing the effects of individualism. The other three cultural values, unfortunately, were not as well represented. Similarly, certain types of outcomes have been studied much more extensively, and others have received limited attention. As a result, the effects of cultural values on some of the outcomes were represented by many data points, and the opposite was true for others. In some cases, we could draw only limited conclusions for certain levels of analysis or cultural values because not enough research has been conducted. This presents an opportunity for

researchers to fill in the gaps in these neglected areas. Therefore, the comparison of effects across cultural values and outcome types that were inconsistently represented in our meta-analytic data set should be interpreted with caution.

Third, our meta-analysis does not completely incorporate country differences that might account for differences in predictive power across nations. For example, we included individualism scores in our data set regardless of the country in which they were obtained. It is likely that someone from the United States and someone from China who have the same score on individualism will not behave in exactly the same manner due to their different country contexts. We obtained some support for this contention by finding significant moderating effects of cultural tightness–looseness. However, future researchers will need to incorporate other country-level factors that might account for differences in how cultural values affect outcomes across countries.

Fourth, a small portion of studies included in our meta-analytic sample used secondary data, such as Hofstede's (1980a) national cultural indices, to operationalize culture at the individual level of analysis. Our moderator analysis showed that using secondary data significantly lowers the reported effect size. Even though the percentage of secondary data studies in our sample was extremely low and it was unlikely that they had a detectable effect on our results, it is still possible that our findings slightly underestimate the true relationship between culture and the outcomes we examined, at least at the individual level.

Finally, because the meta-analytic approach requires commensurability of methodology across all studies included in the pool, we had no choice but to exclude any empirical research that relied on culture frameworks other than Hofstede's (e.g., Kluckhohn & Strodtbeck, 1973; Schwartz, 1994; Smith, Dugan, & Trompenaars, 1996). By doing so, we potentially subjected our meta-analytic results to validity threats, as Hofstede's approach has a number of conceptual and methodological limitations that can contaminate data and introduce a systematic error. Taras and Steel (2009) provided a detailed review of likely deficiencies of Hofstede's approach to quantifying culture. Thus, we provide only a brief summary of the most relevant points here.

In terms of conceptualization of culture, Hofstede's (1980a) multidimensional model may not adequately capture the complete phenomenon of culture, because a singular focus on cultural values largely ignores other aspects of culture. Furthermore, at the individual and national levels, culture may not be as stable as Hofstede believed it was. In terms of his methodology, geography may not be the best way to cluster culture, and nations may not be the best units of analysis (for a more complete discussion of this assertion, see Chao & Moon, 2005). Matched sampling, as used in Hofstede's IBM study, may be appropriate for capturing some, but not all, cultural differences between populations. The focus on cultural means and national rankings greatly limits how we see cultural differences between cultural entities. Finally, self-response questionnaires may be a suboptimal way to gather culture survey data, as self-reports are influenced by personal biases and motivations, differences in understanding of questions and points of reference, and, most important, differences in response styles and the ways in which people respond to Likert-type scales (Harzing, 2006; Smith, 2004).

We acknowledge that the fact that all studies in our meta-analytic sample used Hofstede's (1980a) approach to viewing and

operationalizing culture does limit the generalizability of our findings. To ensure commensurability, one of the most important conditions of a good meta-analysis, we selected only studies that utilized Hofstede's approach. Thus, our sample is subject to the same limitations and threats to validity as Hofstede's original study. To be fair, this is a criticism that can be leveled at any meta-analysis focused around a single measure or methodology, as it necessarily maintains specific method variance (Kenny, 1995). Still, if newer culture measurement tools, such as those offered by the GLOBE team (House et al., 2004), gain wider acceptance and the body of empirical literature based on these models grows, a meta-analysis of culture's consequences based on an alternative framework becomes an inviting possibility. For now, Hofstede's model is the only one that has been used in a substantive number of independent studies allowing for a high-quality meta-analysis.

Future Directions

We organize our directions for future research into three categories: conceptual, measurement, and sampling/research design issues. We also discuss the continuing relevance of Hofstede's (1980a, 2001) framework in each of these respective areas, including the overall five-dimension framework itself (i.e., conceptual); Hofstede's VSM measures (i.e., measurement); and the country scores/rankings obtained in the late 1960s and early 1970s (i.e., sampling/research design). We do not attempt to provide a comprehensive critique of Hofstede's framework or methodology (e.g., see Ailon, 2008; McSweeney, 2002); nevertheless, we do make several recommendations for scholars wishing to use Hofstede's framework with improved precision in future research.

Conceptual directions and recommendations. In addition to questioning the continued use of cultural values, in general, as explanatory mechanisms for organizationally relevant outcomes (discussed in the Theoretical Implications section above), one must ask whether or not Hofstede's (1980a, 2001) framework, specifically, has continued relevance for future research. One (albeit not perfect) way to answer this question is to examine competing frameworks and determine the degree of conceptual overlap between them. Although a detailed analysis of the various frameworks is beyond our scope here, in a recent review of six major cultural value frameworks (i.e., Hall, 1990; Hofstede, 1980a; House et al., 2004; Kluckhohn & Strodtbeck, 1973; Schwartz, 1994; Trompenaars, 1993), Nardon and Steers (2009) collapsed the many cultural value dimensions found in them into five core cultural dimensions (i.e., hierarchy vs. equality, individualism vs. collectivism, mastery vs. harmony, monochronism vs. polychronism, and universalism vs. particularism). A perfect correspondence with Hofstede's five dimensions is not evident; however, several of the dimensions are identical or highly similar (e.g., individualism–collectivism is identical, hierarchy–equality is similar to power distance, and monochronism vs. polychronism is similar to long term vs. short term orientation). There are also elements of mastery versus harmony in Hofstede's masculinity versus femininity dimension and of universalism–particularism in uncertainty avoidance. We strongly believe, in conjunction with our meta-analytic findings, that the continued examination of individualism–collectivism, power distance, uncertainty avoidance, and masculinity–femininity is certainly warranted if relevant

to one's theoretical question of interest and if use of national dimensions of culture is suitable for one's research program.

Given our and others' belief that Hofstede's (1980a, 2001) framework will continue to add value to the cross-cultural organizational behavior and psychology literature, our meta-analysis provides a complementary, quantitative perspective to the qualitative review of Kirkman et al. (2006) and provides direction for future research that their review could not. For example, our meta-analysis identified a number of research opportunities for Hofstede's cultural value dimensions. As our review showed, individualism–collectivism has been the most popular cultural dimension in cross-cultural studies. Very few studies in our sample excluded individualism from their analysis. However, as our meta-analytic findings suggest, there is no viable reason to believe that individualism is the best predictor of organizational behavior and other outcomes. In fact, its predictive power may be comparatively weak for some types of outcomes. Unfortunately, with the focus on individualism, the other cultural value dimensions have remained relatively underexplored. As represented by the differences in data availability on the various cultural dimensions, the number of studies that explored the other dimensions is only one tenth to one fifth of those that addressed issues related to individualism.

In addition to identifying areas in which Hofstede's (1980a, 2001) model has been used extensively, our meta-analytic review identified additional avenues for future research by identifying where use of the model has been limited. For example, our meta-analysis did not allow for any examination of mediators of cultural value effects because they have rarely been studied. Thus, we have little understanding as to the underlying theoretical mechanisms by which cultural values relate to outcomes (Kirkman et al., 2006). Our finding that cultural values are more strongly related to attitudes than to behaviors suggests that cultural value–behavior relationships may be mediated by attitudes. Indeed, researchers may benefit from exploring process models of cultural value effects, as recommended in the personality literature (Barrick, Mount, & Judge, 2001). For example, Van Dyne, Vandewalle, Kostova, Latham, and Cummings (2000) found that organization-based self-esteem mediated the relationship between collectivism and organizational citizenship behavior, and both cooperation (Eby & Dobbins, 1997) and resistance to teamwork (Kirkman & Shapiro, 2001) mediated the relationship between collectivism and team performance. Finding theoretically relevant mediators may help to improve the predictive power of the cultural values on more distal outcomes.

We did not analyze cultural values as moderators in our study. In order to include cultural values as moderators in our meta-analytic review, we would need a sufficient number of studies that examined moderating effects on identical relationships. For example, to understand the effects of cultural values as moderators on the job satisfaction–performance relationship, we would need a large number of studies examining this specific relationship. There are unfortunately too few studies of this type to undertake such a meta-analytic examination at the current time. However, we hope that with Hofstede-inspired research continuing to expand exponentially, such an investigation may be possible in the near future.

As this study represents one of the first attempts to comprehensively analyze the effects of Hofstede's (1980a, 2001) cultural value dimensions meta-analytically, we intentionally kept our research questions and hypotheses general. That is, our purpose was

not to make any predictions about relationships between specific cultural value dimensions and specific outcomes but rather to take a higher level overview of Hofstede's cultural value effects. Of course, our results do allow researchers to examine these more specific relationships using our detailed tables, such as the finding that individualism–collectivism typically has stronger effects on attitudes and behaviors related to groups than the other values do. However, we believe that the large amount of research that has been conducted using Hofstede's cultural value dimensions does present interesting opportunities for researchers to pursue more fine-grained questions and theoretical predictions. Future research could parallel that on the Big Five personality traits showing that specific personality traits affect certain employee outcomes more strongly than others (Barrick & Mount, 1991), as some of our cultural value findings already indicate. Such investigations will only improve the precision and utility of incorporating Hofstede's values in predicting important organizationally relevant outcomes.

Finally, culture is a multilayered construct represented by values, assumptions, rituals, behaviors, and artifacts. Hofstede (1980a) argued that culture is best (or even completely) understood by assessing individuals' values (Javidan et al., 2006, referred to this argument as the *ecological values assumption*). Researchers are now questioning this assumption (Earley, 2006). This is particularly true of those in the GLOBE project, who measured culture both as the values of their respondents (i.e., the “should be” dimension) and as their respondents' perceptions of the ways in which people in a culture actually deal with collective challenges (i.e., the “actually is” dimension; Javidan et al., 2006). Similarly, Leung and Bond (2004) conceptualized culture with social axioms, or people's beliefs rather than values. As Taras and Steel (2009) noted, equating culture with values has been commonly taken as the first “testament” for cross-cultural research, though in reality culture is a much more complex construct, with values representing only one facet. Other aspects of culture may predict outcomes differently than, or explain unique variance beyond, value-based measures. Although we do believe that values will still play a central role in delineating culture's overall effects (as our meta-analytic findings demonstrate), we also believe that expanding the examination of cultural effects beyond values is a promising next step in cross-cultural research.

Measurement directions and recommendations. Beyond questioning the conceptual utility of Hofstede's (1980a, 2001) specific five-dimension framework, one must also ask whether or not Hofstede's actual VSM measures should continue to be used in future research. National culture is clearly intended to be a property of nations or countries, but cultural values themselves reside within and are exhibited by individuals. Individual cultural values are shaped both by a culture's shared meaning system and by each individual's unique personality (Chao, 2000; Chao & Moon, 2005). Thus, national culture is an emergent phenomenon emanating from the shared values of a country's residents, if it is assumed that cultural value constructs share the same content, meaning, and construct validity across levels (Kozlowski & Klein, 2000).

Despite Hofstede's (1980a, 2001) strong statements that his instrument was developed for, and was to be used exclusively at, the national level of analysis, there are doubts about the level of analysis to which the instrument actually corresponds. For example, many of Hofstede's survey questions inquire about *personal issues* and *preferences* (i.e., the use of the referents “I” and “me”

rather than societal-level referents; for this critique, see Javidan et al., 2006). In addition, the replication of Hofstede's framework by Spector, Cooper, and Sparks (2001) showed that Hofstede's model and VSM did not show noticeably better psychometric characteristics and cleaner factor structures when analyzed with aggregated ecological-level data than with individual-level responses. Finally, Hofstede (2001) provided a lengthy list of correlations between his value scores and numerous theoretically relevant national-level constructs. However, we found no differences in the effect sizes for studies using Hofstede's VSM or other individual-level measures for organizationally relevant outcomes. It is ironic that our findings, coupled with previous critiques that Hofstede's VSM is not a purely nation-level measure, may mean that the VSM is actually more valid at the individual level, rather than the nation level. As it stands, determining the level at which to apply Hofstede's VSM, individual or national or both, needs to be more systematically addressed. Chen, Bliese, and Mathieu (2005) described five steps required for conducting multilevel construct validation. Pooling what has been done and filling in any gaps in these steps is the logical next step to better address this issue.

For researchers wishing to focus exclusively at the individual level of analysis, there are valid and reliable measures in the existing literature, some of which may be superior to Hofstede's (1980a), for several reasons. For example, regarding collectivism, Jackson, Colquitt, Wesson, and Zapata-Phelan (2006) recently developed a measure of *psychological collectivism*. They conceptualized it as multidimensional, with five facets including preference for in-groups, reliance on in-groups, concern for in-groups, acceptance of in-group norms, and prioritization of in-group goals (see an alternative multifaceted measure of individualism–collectivism in Triandis, Leung, Villareal, & Clack, 1985). These multifaceted views of individualism and collectivism are a response to critiques highlighting lower than desired reliability for previous holistic measures, including Hofstede's (Earley & Gibson, 1998; Oyserman et al., 2002). Jackson et al. (2006) also noted that their measure contains items that are more work context focused than other, more general collectivism measures, such as Hofstede's, and thus these items may have more predictive power for work-related outcomes. Cross-cultural validation will be needed, of course, before the measure's widespread use in countries worldwide.

In addition, Earley and Erez's (1997) individual-level power distance measure has been used with good reliability in a variety of cross-cultural studies (Brockner et al., 2001; Earley, 1999; T. Kim & Leung, 2007). To avoid level of analysis confusion, Kirkman, Chen, Farh, Chen, and Lowe (2009) referred to this construct as *power distance orientation*, finding that it moderated the cross-level relationship between group-level transformational leadership and individual-level procedural justice perceptions in both China and the United States. Kirkman et al. found no country-level differences with regard to the moderating effects of power distance. This finding supported the importance of examining individual variations in cultural values in addition to country-level variation to understand people's reactions to work-related practices. Uncertainty avoidance and masculinity–femininity have received much less attention with regard to individual-level measures, but examples can be found in Dorfman and Howell (1988).

One of the next frontiers in the measurement of cultural values at the individual level may be a continuation of the development of

facets of each of the dimensions, similar to Jackson et al.'s (2006) psychological collectivism measure. For example, regarding the masculinity–femininity dimension, masculine values include aspects such as assertiveness and the acquisition of money and things but also separate values concerning gender roles in organizations (Hofstede, 2006). These subfacets could feasibly predict different types of outcomes (e.g., House et al., 2004, separated gender egalitarianism and assertiveness at the national level). Ailon (2008) argued that there are different aspects of power distance, including boss/subordinate, researcher/research objects, within/between groups, and within/between states, and that Hofstede's (1980a) conceptualization included only one type (i.e., boss/subordinate). In the personality literature, research on the Big Five personality traits has shown enhanced precision and predictive power for certain outcomes when subfacets of the Big Five dimensions are used (Barrick et al., 2001). Of course, as discussed, issues of matching bandwidth will be relevant here. Therefore, as Jackson et al. (2006) noted, cultural value measures tailored to specific aspects of work and outcomes will be superior to more general cultural value measures.

Finally, as Javidan et al. (2006) discussed, Hofstede's cultural scores are based on a summary index of personal questions (i.e., using the referents "I" and "me"). In comparison, the GLOBE team used referent-shift questions (i.e., those based on societal-level referents). Though Javidan et al. argued that theirs is a superior methodology, there is still no clear answer about the superiority of either approach or any other approaches. Chen, Mathieu, and Bliese (2004) described six different models for creating aggregate constructs: selected score, summary index, consensus, referent shift, dispersion, and aggregate models (for more details and alternative classification of aggregation methods, see also Kozlowski & Klein, 2000). Exploring the other four aggregate construct models to operationalize culture is likely to be a promising venue for future research.

Sampling and research design directions and recommendations. Beyond assessing the continued use of Hofstede's (1980a, 2001) framework and actual VSM measures, studies have posed a question integral to cross-cultural research sampling and design, that is, whether or not to continue to use Hofstede's country scores/rankings in future research. First, numerous studies have shown that culture may be changing much faster than previously believed at both national and individual levels (Olivas-Luján et al., 2004; Ralston et al., 2006; Rokeach, 1989). Thus, using country scores from the 1960s and 1970s is likely to severely limit accuracy of estimates. Second, it has been traditionally assumed that cultures are contained within countries and countries represent cultural groups. Yet, geography may not be the best dimension for clustering culture. Globalization is making studies of cultural values of certain countries or even regions less useful, and future research may be more meaningful if focused on cultural values of age-groups, socioeconomic classes, or professional communities. Finally, less than two percent of studies in our sample reported statistics on dispersion of cultural values within samples. Although culture means do provide important information about cultural values in a group, this statistic is too limited, as it ignores the nature of the distribution of values within the group and provides basically meaningless information in cases of bimodal, severely skewed, or otherwise nonnormal distributions. We strongly encourage researchers to look beyond means (i.e., country scores)

when analyzing the effect of culture on organizational processes and outcomes.

Beyond the use of country scores Hofstede's (1980a), choice of sample is not a trivial issue, because this meta-analysis confirmed that sample composition can affect the results of examining cultural value effects. At an extreme, for example, Steel and Ones (2002) found that more conscientious countries tend to be economically poorer than less conscientious ones, a counterintuitive result that they attributed to using an undergraduate student sample (i.e., people in poorer countries must be more conscientious to be accepted into universities). As sample choice can significantly affect results, it should be more carefully considered in future studies. This clearly goes beyond just choosing samples representative of the general population. It would also be interesting to determine whether and/or which subcultures of a country are most influential in determining key characteristics or behaviors, such as public policy. As Taras et al. (2009) suggested, top managers, though less representative of the overall population, "may be more predictive on many relationships due to the concentration of power (e.g., foreign policy, health care mechanisms)" (p. 60).

One observation that we have made based on our extensive literature search through numerous psychology, management, and sociology publication outlets was that culture has been operationalized virtually exclusively via self-response, Likert-type questionnaires. Numerous studies have shown the limitations of self-response data in general and in cross-cultural contexts in particular. The most common concerns relate to cross-cultural differences in acquiescence bias (i.e., the tendency to agree with the statements in survey items), the tendency to choose middle or extreme points on the scale, differences in the interpretation of relative strength associated with scale anchors, inclinations to socially desirable response style, and effects of language of the survey or responses (for more details, see Harzing, 2005, 2006; Hui & Triandis, 1989; Johnson, Kulesa, Cho, & Shavitt, 2005). Methods for eliminating the effects of such response styles have been suggested and used in cross-cultural research, but they are unfortunately not without limitations (for a review, see Smith, 2004). Though better survey design will help to reduce some of these systematic and nonsystematic sources of error, the self-assessment of culture will continue to be tainted by these and other method variance factors, including many of the same issues, such as personality, that affect similar forms of self-report (Taras et al., 2009; Taras & Steel, 2009). The question is simply to what degree.

More success in eliminating method variance may come from improved research designs rather than reliance on better survey designs alone. In particular, culture research would benefit by sampling the respondent over several separate time periods, ideally at least three points in time (Kammeyer-Mueller, Steel, & Rubenstein, in press). This would enable the researcher to factor out temporary person-level effects (e.g., bad mood) or group-level effects (e.g., seasonal or business cycles), depending on the particular emphasis, and would allow for better assessment of the underlying cultural constructs. This type of analysis can be easily incorporated into hierarchical linear modeling (HLM), a multilevel research design that arguably should be seen far more often in cultural research.

In addition, self-response surveys in cross-cultural research may be problematic when they ask respondents to evaluate group cultures. For example, the GLOBE survey asks participants to

evaluate the extent of various phenomena "in this country" (House et al., 2004). Not only might the respondents have limited information and skills for making a credible judgment about the group's culture, but their answers might be affected by their subjective points of reference (Hofstede, 2006). For example, even though Canada may be a highly individualistic country compared to the world's average, respondents in Canada may rate their society as more collectivistic, as they may be using the even more individualistic United States as a point of reference. Determining the accuracy of such judgments is an issue long considered by personality psychologists, particularly by Funder (1995). Future cultural research should consider drawing upon his realistic accuracy model, which identifies moderators of accuracy. Moderators indicate that some are better at making cultural judgments than others and that some cultural dimensions are easier to assess than others.

Regarding issues of multilevel culture research, although culture is an inherently multilevel construct, our review revealed that despite considerable progress in the development of multilevel theories and data analysis techniques, there are no culture studies in our sample that attempted to bridge these levels of analysis. The very few exceptions we could find were integrative literature reviews (e.g., Kirkman et al., 2006), conceptual models (Fischer, Ferreira, Assmar, Redford, & Harb, 2005), methodology development pieces (Cheung & Au, 2005), or studies that used secondary data to explain the phenomenon of culture (Steel & Taras, in press). All were published within the past few years.

The lack of multilevel empirical studies in culture research is likely rooted in the traditionally apprehensive attitude toward cross-level generalizations in cross-cultural studies. The controversy surrounding multilevel research can be traced back to Hofstede, who repeatedly warned scholars about the possibility of ecological fallacy when generalizing his findings and model across levels (e.g., Hofstede, 1995, 2001, 2002). His frequent warnings against cross-level generalizations of his specific data seem to have formed a perception that any cross-level analysis would lead to ecological fallacy and thus is taboo in cross-cultural research (Taras & Steel, 2009). As a result, the multilevel research on culture has been effectively curtailed to discussions on whether or not existing models of culture, such as those offered by Hofstede (1980a), generalize across levels of measurement.

Since the original explanation by Thorndike (1939) and later popularization by Robinson (1950), no one has questioned that ecological fallacy is a valid concern. Indeed, generalizing findings obtained with individual data to the national level and vice versa (i.e., generalizing findings obtained with country-level data to explain individual-level processes) can lead to misleading results. However, multilevel models and analysis do not necessarily lead to ecological fallacy and if developed and applied properly can provide very meaningful and useful results.

We have progressed considerably since Robinson (1950), whose own example, ironically, was shown to represent a model specification problem and not an ecological fallacy at all (Hanushek, Jackson, & Kain, 1974). As noted by Jargowsky (2004, p. 721), "the 'ecological fallacy' has lost some of its sting, and should not cause researchers to abandon aggregate data." Moreover, more often than not ecological inference is the preferred way to study a complex phenomenon, which culture indisputably is. A proper simultaneous analysis of data representing different levels of measurement opens new frontiers and allows for addressing questions

that could not be answered with a single-level approach. Chen and colleagues (Chen et al., 2004, 2005) have provided detailed instructions for validating multilevel constructs and testing cross-level homology of theories. Recent progress in data analysis techniques, such as HLM (Raudenbush & Bryk, 2002), has offered many great tools for cross-level studies, and we encourage researchers to make more use them. Furthermore, a related and particularly interesting question is the continued exploration of how cultural homogeneity relates to individual-level associations. Teams, for example, tend to benefit from group similarity, despite some of these traits having negligible individual-level effects (Peeters, van Tuijl, Rutte, & Reymen, 2006). The cultural field would benefit from showing similar interest in how effects reflect, reverse, or strengthen as we move from one level of aggregation to another and also why. Please see Table 8 for a summary of our future research directions.

In keeping with our recommendations to conduct more multi-level culture research, we provide an example framework for one possible research program in Figure 1. Note that our model is not comprehensive but, rather, focuses on the individual level of analysis as the primary level of concern. Similar models could be constructed with either the group/organizational level or the country level as the primary level of focus. The model is not intended to provide an exhaustive list of all possible mediators or moderators of individual-level cultural value effects; rather, it is offered to highlight the types of constructs that hold promise for better understanding the way cultural values affect important individual outcomes. The model is consistent with our meta-analytic findings that individual-level cultural values affect emotions, attitudes, and perceptions more strongly than behaviors and, in turn, behaviors more strongly than job performance. As we have stated, cultural beliefs may help to explain aspects of culture not captured by cultural values. Thus, we include both as predictors in our model and note that they are likely to have reciprocal relationships with one another. Also, as we have stated, an area of great promise for future research is an examination of possible mediators of cultural value (and belief) effects. Thus, we highlight affect, attitudes, perceptions, and cognitive schema as possible mediators of cultural belief/value effects on behavior and, consequently, job performance. Our model also shows that cultural beliefs/values can moderate relationships between individual-level facets, such as attitudes and perceptions and behavior, and between behavior and job performance. Kirkman et al.'s (2006) qualitative review demonstrated that examining cultural values as moderators continues to be an active and meaningful research stream.

Another promising avenue for future research highlighted by our model is an examination of moderators of cultural belief/value effects (Gelfand, Leslie, & Fehr, 2008), including moderators at the individual, group/organizational, and nation levels. For example, to our knowledge, the interactive effects of cultural values and personality traits have rarely been examined empirically at the individual level (Kirkman et al., 2006). Cultural effects may be less powerful when one is higher, rather than lower, on personality traits such as extraversion or openness to experience, because these personality types are more likely to be socially adaptable or more likely to change their values to fit the social setting in which they find themselves at any given time (Gibson et al., 1999).

Examining moderating effects at higher levels of analysis would necessitate the use of a multilevel approach (Chao, 2000; Chao &

Table 8
Summary of Future Research Directions

Conceptual issues

1. Hofstede's cultural value dimensions remain theoretically relevant to the study of cultural differences.
2. Researchers should move beyond individualism–collectivism as the dominant cultural value of interest.
3. Broaden the study of mediators of cultural value effects to increase understanding of underlying theoretical mechanisms responsible for these effects (i.e., use more process models).
4. Broaden the study of cultural values as moderators.
5. Use meta-analytic results as an impetus to conduct more fine-grained studies of cultural value effects showing that certain cultural values are more strongly related to certain outcomes (i.e., paralleling research on the Big Five personality traits).
6. Move beyond cultural values as the only way to examine effects of cultural differences (e.g., beliefs).

Measurement issues

1. Hofstede's Value Survey Module did not show any less predictive power when compared to cultural value measures designed specifically at the individual level of analysis; thus, it can be used to conduct individual-level studies.
2. Cultural value measures designed specifically for the individual level now exist and should be considered, particularly when trying to predict work-related outcomes (e.g., psychological collectivism, Jackson et al., 2006; power distance orientation, Earley & Erez, 1997).
3. Opportunities exist for researchers to explore different facets of Hofstede's cultural value dimensions (e.g., Jackson et al.'s 2006 psychological collectivism measure contains five subdimensions). Paralleling research on the subdimensions of the Big Five, research might improve the predictive power of the cultural value dimensions by matching the bandwidth of predictors and criteria.
4. Chen et al. (2004) and Kozlowski and Klein (2000) described six distinct models for creating aggregate constructs: selected score, summary index, consensus, referent shift, dispersion, and aggregate models. Cross-cultural research has relied almost exclusively on summary index and referent-shift models to describe the culture of a group. Exploring the other four aggregate construct models to operationalize culture is likely to be a promising venue for future research.

Research design/sampling issues

1. Due to increases in the pace of cultural change worldwide, there should be a moratorium on using Hofstede's country scores (derived from data collected in the late 1960s and early 1970s).
2. Sample choice can significantly affect results of examining cultural values and should be more carefully considered in future studies; in particular, researchers should determine whether and/or which subcultures of a country are most influential in determining key characteristics or behaviors.
3. Culture research would benefit by adopting a multisource research design, rather than relying exclusively on self-report, survey-based designs.
4. Cross-cultural researchers should consider issues of accuracy when assessing cultural values of individuals, perhaps drawing upon Funder's (1995) Realistic Accuracy Model, which identifies moderators of accuracy.
5. Cross-cultural researchers should incorporate multilevel theories and data analysis techniques into their future research.
6. Researchers should explore how cultural homogeneity relates to individual level associations.

Moon, 2005; Kozlowski & Klein, 2000). For example, the predictive power of cultural values might be affected by characteristics of the work group to which one belongs. If, for example, members belong to a highly cohesive work group or one with which they strongly identify, cultural values might have weaker effects on

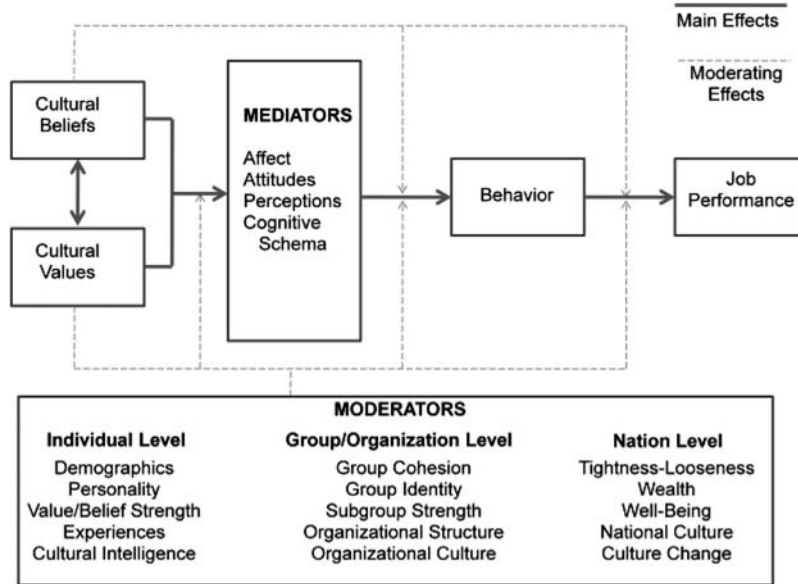


Figure 1. An example of a multilevel model of future cultural value research (with the individual level as the primary level of focus).

outcomes than on the values of the group, particularly if these values diverge (Gibson et al., 2009). At the organizational level, Chatman and Barsade (1995) found that individualistic–collectivistic organizational culture moderated the relationship between individually held cultural values and cooperative behavior, demonstrating cross-level moderating effects of organizational values on individual cultural value effects. At the nation level, our meta-analysis showed that cultural tightness–looseness affected the strength of the predictive power of cultural values. Other nation-level factors, such as wealth, well-being, and the pace of cultural change, could also feasibly influence the strength or direction of cultural value effects for particular outcomes. A simultaneous examination of nation-level cultural value dimensions and individual-level cultural value effects could uncover potentially interesting cross-level cultural value interaction effects, similar to Chatman and Barsade’s work at the organizational and individual levels.

Of course, our model could be expanded considerably beyond its present scope, particularly with regard to adding mediators and moderators and moving beyond the primary focus of the effects of individual-level cultural beliefs/values. We hope this model begins to stimulate the next generation of what is sure to be an exciting continuation of interesting and significant cultural value research.

Conclusion

We attempted to bring a more quantitative lens to the empirical research that has been conducted using Hofstede’s (1980a, 2001) cultural value framework over the last three decades. Our results revealed that cultural values can predict certain organizational and employee outcomes similar to, or even stronger than, other individual differences such as personality traits. We also found that the predictive power of cultural values depends on such contingency factors as demographic characteristics, primary versus secondary

data, and the cultural tightness–looseness of the countries in which the data are collected. Our findings not only should help researchers interpret previous mixed findings in the literature but also should help them make better sense of their findings when using Hofstede’s framework, moving forward. Research using Hofstede’s framework clearly shows no sign of abating. It is only through better understanding of how much and when cultural values make a difference in employee outcomes that Hofstede’s framework can be optimally used in cross-cultural organizational behavior and psychology research.

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- References marked with an asterisk indicate studies included in the meta-analysis that are discussed in the text. For a complete list, go to <http://dx.doi.org/10.1037/a0018938>.supp
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Correction to Taras, Kirkman, and Steel (2010)

In the article “Examining the Impact of *Culture’s Consequences: A Three-Decade, Multilevel, Meta-Analytic Review of Hofstede’s Cultural Value Dimensions*,” by Vas Taras, Bradley L. Kirkman, and Piers Steel (*Journal of Applied Psychology*, 2010, Vol. 95, No. 3, pp. 405–439), Tables 1 and 2 were printed incorrectly due to errors in the production process.

In Table 1 (p. 414), row 2 (vote count, data point count) the table incorrectly lists 0s for categories in which data points were not available; therefore the data cells should in fact be empty.

In Table 2 (pp. 416–423), due to formatting errors some of the columns were incorrectly shifted either one or two columns to the right (i.e., in row 1, the “4” should be aligned under the “k,” not the “r”). The formatting errors in Tables 1 and 2, however, do not affect the values in the tables.

Corrected versions of both Table 1 and Table 2 can be found at <http://dx.doi.org/10.1037/a0020939>.supp