

THE RELATION BETWEEN CULTURE AND RESPONSE STYLES Evidence From 19 Countries

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The authors investigated at the country level the effects of four cultural orientations identified and studied by Hofstede on two commonly recognized response biases: extreme response style and acquiescent responding. Data are presented from approximately 18,000 survey questionnaires completed by employees in 19 nations on five continents (Australia, Belgium, Brazil, Czech Republic, Germany, Hungary, India, Japan, Malaysia, Portugal, Turkey, the United Kingdom, Mexico, the Philippines, Poland, Singapore, Hong Kong, France, and Italy). Hierarchical linear modeling was employed to examine the associations between person-level response styles and country-level cultural orientations. Consistent with theoretical expectations, power distance and masculinity were found to be positively and independently associated with extreme response style. Individualism, uncertainty avoidance, power distance, and masculinity were each found to be negatively associated with acquiescent response behavior. Further research is needed to identify how question characteristics might interact with cultural orientations to influence response behavior.

Keywords: acquiescence; extreme response style; culture-level; cross-cultural; method bias

Shortly after World War II, social researchers began to investigate a variety of potential sources of measurement error in research instrumentation. Among these were systematic variations in the styles used by respondents to answer survey questions. Two of these forms of response style are extreme responding, or extreme response style (Cronbach, 1946), and acquiescent, or yea-saying, behavior (Couch & Keniston, 1960). Although these measurement artifacts have been recognized and studied now for more than 50 years, surprisingly little is known with regard to their cultural origins. In this article, using diverse samples of adults in 19 countries, we investigate the associations between several dimensions of national-level culture and individual variability in acquiescent and extreme response styles. Of specific interest in our comparisons are Hofstede's (2001) original four cultural dimensions of power distance, uncertainty avoidance, individualism-collectivism, and masculinity-femininity.

Extreme response style refers to a greater tendency of some respondents to select the end-points of a response scale when answering questions. The implications of this measurement artifact for cross-cultural research are serious, as group variations in extreme response pat-

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terns, when left unevaluated, may be misinterpreted as substantive differences in the construct(s) being examined. Indeed, this concern is justified, as differences in extreme responding have been found between a variety of national and ethnic groups, including Caucasians, African Americans, and Latinos in the United States (Bachman & O'Malley, 1984; Clarke, 2000; Hui & Triandis, 1989; Warnecke et al., 1997), between U.S. and Korean respondents (Chun & Campbell, 1974; Lee & Green, 1991), Japanese and Americans (Stening & Everett, 1984; Zax & Takahashi, 1967), members of Northern and Southern European nations (van Herk, Poortinga, & Verhallen, 2004), and between French and Australian samples (Clarke, 2000). The cultural qualities responsible for this variability, however, remain unknown. Some have hypothesized that they reflect differences in emphasis on sincerity versus modesty in social interactions (Marín & Marín, 1989).

A second response style of present interest is acquiescence bias, also known as agreement bias. This is the tendency of some respondents to agree with questions, regardless of question content. In the United States, differences have been found in acquiescent reporting behavior among Caucasian, White, and Latino populations (Aday, Chiu, & Anderson, 1980; Carr, 1971; Johnson et al., 1997; Marín & Marín, 1989), as well as in several cross-national comparisons (Cunningham, Cunningham, & Green, 1977; Grimm & Church, 1999; Morris & Pavett, 1992; Riordan & Vandenberg, 1994; Ross & Mirowsky, 1984; van Herk et al., 2004). Similar to extreme responding, acquiescence bias, when uncontrolled, has the potential to introduce serious confounds that may threaten the validity of cross-cultural comparisons (Cheung & Rensvold, 2000). Welkenhuysen-Gybels, Billiet, and Cambre (2003), for example, have documented the importance of controlling for acquiescence bias when evaluating construct equivalence across multiple groups. Cultural variability in acquiescent behavior is often linked to the norm of agreeableness, which is known to vary significantly in importance across cultures and nations (Hui & Triandis, 1983; Javeline, 1999).

Further emphasizing the importance of investigating measurement artifacts such as these are findings of the temporal stability of acquiescence and extreme responding behaviors across ethnic subgroups in the United States (Bachman & O'Malley, 1984). It is interesting that all empirical comparisons of these two response style patterns, at the individual level, have involved comparisons between no more than two or three national or ethnic subgroup samples. Hence, our ability to generalize from this evidence remains limited. More important, as mentioned earlier, the dimensions of respondent culture that drive these group differences remain largely unexplored and unknown. Several recent international studies, for example, have examined both extreme response styles and acquiescence but did not examine the potential effects of variability in cultural orientations on these response styles. Baumgartner and Steenkamp (2001) explored response styles across 11 European Union nations but did not address potential linkages between dimensions of culture and response style. Several multinational surveys reported by van Herk (2000) also examined these response styles in a number of European countries. Although cultural dimensions were not examined, the author acknowledged the need for further research on this topic.

We are aware of three studies that have examined the association between response style and cultural orientation. Chen, Shin-ying, and Stevenson (1995), employing an ad hoc measure of individualism in a study of high school students in Japan, Taiwan, Canada, and the United States, reported an association between self-reported individualism and extreme response behavior at the individual level within each country. In addition, recent research by Smith (2004) explored evidence from multiple sources concerned with the cultural correlates of acquiescent response styles. He found that national-level collectivism, power distance, and uncertainty avoidance predicted acquiescence bias in response to personally

relevant survey items. van Hemert, van de Vijver, Poortinga, and Georgas (2002) also investigated national-level correlates of the Eysenck Lie Scale, which is believed to reflect conformity and, hence, acquiescence. They found individualism to be negatively associated and power distance to be positively associated with this measure. These studies highlight the important role that cultural orientation may play in understanding response styles and suggest promising directions for additional research.

THE RELATION BETWEEN CULTURAL DIMENSIONS AND RESPONSE STYLES

Despite extensive work on the cultural dimensions that Hofstede (2001) originally proposed, there is little theoretical guidance concerning the form that associations between these cultural dimensions and response styles might take. We nonetheless offer tentative hypotheses concerning potential relationships between culture and each form of response style. These hypotheses are based on the following assumptions about culturally relevant norms and motives associated with the response styles under investigation. First, we argue that an extreme response style is in line with a motivation to achieve clarity, precision, and decisiveness in one's explicit verbal statements, whereas a middling response style is in line with norms for ambiguity, flexibility, and modesty in one's verbal statements. Second, we suggest that acquiescence is a submissive response style that conveys agreeableness and deference to hierarchy, especially in contexts in which interpersonal or group harmony is important (Javeline, 1999). Such response behavior has been documented in several cultural groups. Among Latinos, this pattern of social interaction is known as *simpatía* (Triandis, Marín, Lisansky, & Betancourt, 1984). A similar pattern exists among East Asian populations, where it has been referred to as a "courtesy bias" (Deutscher, 1973; Niikura, 1999).

Cultures high in power distance tend to be more authoritarian societies where conformity is stressed and submissiveness is common (Hofstede, 2001). One manner in which conformity might be expressed is via deferential, or acquiescent, behavior. National-level analyses of data reported by Gordon (1976; cited in Hofstede, 2001, p. 509) have found a positive independent effect of power distance on measures of conformity across 17 countries, suggesting a linkage between this cultural dimension and deference. Hofstede (2001, p. 96) has also interpreted research by Williams, Satterwhite, and Saiz (1998) as evidence of greater acquiescent behavior among persons in high power distance cultures. Several national-level measures of acquiescence have additionally been found to be positively correlated with Hofstede's measure of power distance (Smith, 2004; van Hemert et al., 2002). We thus expect to find that persons in societies that are high in power distance will be more likely to exhibit acquiescent response behavior when completing questionnaires. The large power differentials of a high power distance culture may also demand or foster greater decisiveness and definitiveness in communications, which we hypothesize will promote extreme response style behavior. Conversely, persons in low power distance cultures, which are similar to horizontal cultures in their emphasis on equality in status (Chen et al., 2001; Triandis & Gelfand, 1998), may be more likely to emphasize modesty as a value (Nelson & Shavitt, 2002). Thus, low power distance may be associated with a more middling response style.

Persons embedded in masculine cultures may also be more likely to endorse extreme responses on questionnaires. Perhaps some of the better known features of masculine cultures are emphases on assertiveness and on decisive and daring behavior (Hofstede, 1998, 2001, p. 298). These qualities may encourage respondents within such cultures to select the

strongest available choices for representing their opinions. In contrast, more feminine cultures emphasize modesty (Hofstede, 1998), which may be reflected at the individual level by personal preferences for more middling and less extreme response styles. These same qualities suggest that persons in masculine cultures may be less likely to display acquiescent response behaviors. Supporting evidence comes from a secondary analysis of data first reported by Bass and Burger (1979), in which Hofstede (2001) found national-level measures of assertiveness to be independently associated with masculinity across 12 nations (p. 267). However, recent work by van Hemert et al. (2002) and Smith (2004) both reported the absence of a relationship between national-level measures of Hofstede's femininity dimension and several direct indicators of acquiescence. It is thus with some caution that we hypothesize that extreme response styles will be more common, and acquiescence less common, among persons in masculine cultures.

Individualistic cultural orientations may also be associated with these response artifacts. Persons from nations with individualistic cultures seek to achieve clarity in their explicit verbal statements (Hall, 1976; Triandis, 1995) because they are less concerned with the consequences of expressing strong opinions. Therefore, extreme response styles may be more common among persons from individualist countries. Conversely, collectivism is associated with a greater emphasis on interpersonal harmony and with less emphasis on individual opinions (Chen et al., 2001; Hofstede, 2001). Ambiguity in communication is adaptive in these cultural contexts. Thus, a middling response style should better fit the cultural norms and imperatives of persons living in collectivist cultures. As mentioned earlier, Chen et al. (1995) have reported findings consistent with an association between individualism, measured at the person level, and extreme response behavior. For the same reasons, response acquiescence may be less common among persons in individualistic cultures because maintaining harmony and conveying agreeableness and deference are less emphasized in these cultural contexts. Persons in collectivist cultures, in contrast, may be "more sensitive to the social pressures emanating from the questionnaire" (Hofstede, 2001, p. 218). A cross-cultural meta-analysis of Asch's (1956) classic conformity experiments produced evidence consistent with the expectation that conformity is less common in individualistic societies (Bond & Smith, 1996). In addition, many studies that have compared national and sub-national groups (Aday et al., 1980; Grimm & Church, 1999; Johnson et al., 1997; Marín, Gamba, & Marín, 1992; Ross & Mirowsky, 1984; van Herk et al., 2004) have reported evidence supportive of the hypothesis that acquiescent response behaviors may be more common in collectivistic societies. National-level correlations between cultural orientations and acquiescence reported by Smith (2004), van Hemert et al. (2002), and Hofstede (2001, p. 509) also support this hypothesis. Consequently, we anticipate that persons within individualistic cultures will be less likely to exhibit acquiescent response behavior and more likely to demonstrate extreme response behavior.

According to Hofstede (2001), societies higher in uncertainty avoidance have many rules and have little tolerance for ambiguity. Research has suggested that individuals' extreme responding is a reflection of intolerance of ambiguity (Hamilton, 1968). The endpoints of a measurement scale may often be interpreted by respondents as being more definitive and clear than are scale midpoints, which are more likely to be subject to qualifications and multiple interpretations by respondents. We thus hypothesize that extreme responding will be more common in cultures that emphasize uncertainty avoidance.

The nature of the relation between uncertainty avoidance and acquiescent response style is somewhat less clear. On one hand, one might argue that providing acquiescent responses

across multiple items in a questionnaire is inherently ambiguous, as a respondent's true opinions or feelings cannot be discerned from such data. Persons embedded within cultural frameworks less tolerant of ambiguity may thus have less inclination to provide ambiguous, or acquiescent, responses. On the other hand, for any given item, if there is any uncertainty about how to respond, agreeing with the item offers a less ambiguous resolution than does a middling ("unsure") response. That is, similar to the reasoning concerning the link between uncertainty avoidance and extreme response style, acquiescent behavior may be a mechanism for enhancing the certainty of one's responses to individual items. If that is the case, acquiescent response behavior may be more common within cultures that are high in uncertainty avoidance. Consistent with this interpretation, Smith's (2004) research suggests a positive association between uncertainty avoidance and acquiescent response behavior. These findings, however, were based on measures from the Global Leadership and Organizational Behavior Effectiveness (GLOBE) project (House, Hanges, Javidan, Dorfman, & Gupta, 2004), rather than the Hofstede measure of uncertainty avoidance, which was not significantly associated with acquiescence in that study. Hofstede's uncertainty avoidance measure was also unassociated with the measure of acquiescence employed by van Hemert et al. (2002). Our data afford an opportunity to further explore the nature of this and other relationships between cultural dimensions and response behaviors.

METHOD

DATA SOURCE

The data to be analyzed were originally collected as part of employee surveys conducted by ISR LLC, between 1992 and 2002. A total of 20,270 self-administered surveys was available for analysis. A total of 19 countries on five continents is represented in these data. Europe is somewhat overrepresented, with data contributed from 9 countries. Seven Asian countries are additionally represented, along with 1 country each from North and South America, plus Australia. The specific countries included are as follows: Australia, Belgium, Brazil, the Czech Republic, France, Germany, Hong Kong, Hungary, India, Italy, Japan, Malaysia, Mexico, the Philippines, Poland, Portugal, Singapore, Turkey, and the United Kingdom. The number of respondents within each of these countries is reported in Table 1.

All respondents completed a common core set of questions using 5-point Likert-type response scales. As these were employee surveys, the questionnaire content was largely restricted to questions concerned with employee satisfaction and work environment (the specific wording of sample questions examined is available from the authors). Although the precise number of questions varied somewhat across countries, the average number of items included in each questionnaire was approximately 120. Most items were closed-ended and employed 5-point Likert-type response formats. The predominant response format was the following: *disagree, tend to disagree, unsure, tend to agree, agree*. Two less commonly employed response formats included (a) *very poor, poor, adequate, good, very good*, and (b) *very dissatisfied, dissatisfied, neither, satisfied, very satisfied*. Only items using the disagree-to-agree format were included in these analyses. Questions were worded in a similar manner and direction across all countries.¹ Additional information was available with regard to several person-level characteristics, including age, gender, and length of employment.

TABLE 1
Country-Level Values for Hofstede's Four Dimensions and Per Capita Gross National Product (GNP)

Country	Total N = 20,270	Power Distance	Uncertainty Avoidance	Individualism	Masculinity	GNP Per Capita ^a
Australia	459	low	medium	high	medium	medium
Belgium ^b	995	medium	high	high	low	high
Brazil	1,092	high	medium	medium	low	medium
Czech Republic ^b	749	medium	medium	medium	medium	medium
France	1,028	medium	high	high	low	high
Germany ^b	1,751	low	medium	medium	high	high
Hong Kong ^b	502	medium	low	low	medium	high
Hungary ^b	750	low	medium	high	high	medium
India	1,525	high	low	medium	medium	low
Italy	1,054	low	medium	high	high	medium
Japan ^b	726	low	high	medium	high	high
Malaysia	500	high	low	low	low	low
Mexico	1,420	high	medium	low	high	low
Philippines	508	high	low	low	medium	low
Poland ^b	788	medium	high	medium	medium	low
Portugal ^b	591	medium	high	low	low	medium
Singapore ^b	519	high	low	low	low	high
Turkey ^b	1,000	medium	high	medium	low	low
United Kingdom	4,313	low	low	high	high	medium

a. Based on the World Bank estimates of 1998 GNP per capita published at <http://www.worldbank.org/depweb/english/modules/economic/gnp/datanot.html>

b. Nations included in the analysis of acquiescence.

MEASURES

Country-level scores for power distance, uncertainty avoidance, individualism-collectivism, and masculinity-femininity were abstracted from Hofstede's (2001) results and appended to the data set. As there was a wide distribution of values for each dimension (approximate range = 0 to 100), and a relatively small number of countries available for analysis, these scores were trichotomized into high-medium-low ordinal values for purposes of analysis. This rescaling had the effect of truncating the outliers within the distributions of each measure, a conservative process that might contribute to attenuated relationships. It also assured that the number of cases exceeded the distribution of each measure. The values assigned to each country for each dimension are presented in Table 1. These values served as the primary independent variables for these analyses.

Measures of extreme response style and acquiescence were constructed from the questions available in the core survey instrument. These were employed as the dependent variables of interest. To develop an index of extreme response style, 61 questions sharing a similar set of response options (e.g., ranging from 1 = *disagree* to 5 = *agree*) were recoded such that selection of either endpoint received a code of 1 and the middle values received a code of 0. These items were then summed to form an extreme response style measure with a hypothesized range of 0 to 61. Higher values on this index were reflective of more extreme responding. The psychometric qualities of this measure were excellent. The pooled alpha reliability coefficient was .96. Within-country alpha coefficients ranged from .92 to .96.

A measure of acquiescence was developed by selecting a separate set of 18 items, half of which were worded in a positive direction and half of which were worded negatively. Responses to these items were available only for 10 of the 19 nations included in the data file. Hence, all analyses of acquiescence are restricted to this subset of 10 nations, which are identified in Table 1. The 18 items included 9 pairs of items that dealt with similar content but were worded in opposite directions. For example, pairs of questions included the following: "For the work I do, I am fairly paid," and "For the work I do, I am very much underpaid." A second pair of questions included, "I am optimistic about the future of my company," and "I am frequently worried about the future of my company." Using the coding scheme developed by Winkler, Kanouse, and Ware (1982), values of 1 were assigned to each question pair for which respondents agreed or tended to agree with both items; otherwise, a value of 0 was assigned. These items were then summed to create an index that ranged from 0 to 9, with higher values representing greater levels of acquiescence. The pooled alpha reliability coefficient for this measure was .43 and ranged within countries from .36 to .55.

The correlation between our measures of acquiescence and extreme response style was low ($r = .05$), suggesting that these response style indicators are largely independent of one another. The acquiescence measure, however, was strongly correlated with Hofstede's acquiescence indicator (see Hofstede, 2001, p. 484) when averaged at the national level ($r = .96$) for the seven nations included in both data sets. Our acquiescence measure was also associated, but less strongly ($r = .37$, $n = 9$ countries), with the national-level measure of acquiescence employed by Smith (2004). These findings suggest that the measure has good construct validity.

Other individual-level measures included in these analyses were gender, age, and length of employment. Each was used as a control variable to adjust for potential variations in sample composition across countries. Some evidence is available to suggest that age and gender, in particular, may be associated with these response artifacts (Hamilton, 1968; Johnson et al.,

TABLE 2
Summary Information for Individual-Level Variables

<i>Variable</i>	<i>Extreme Response</i>		<i>Acquiescence</i>	
	N	M (SD)	N	M (SD)
Total	18,307	24.87 (16.19)	8,079	5.28 (1.80)
Gender				
Male	10,681	25.37 (16.61)	4,742	5.33 (1.80)
Female	7,626	24.17 (15.55)	3,337	5.20 (1.81)
Age				
Younger than 25	3,044	26.59 (16.04)	1,006	5.19 (1.87)
25 to 34 years	5,850	24.79 (16.10)	2,482	5.18 (1.76)
35 to 44 years	5,044	24.52 (16.61)	2,286	5.35 (1.79)
45 or older	4,370	24.16 (15.84)	2,307	5.34 (1.82)
Tenure/length of current employment				
Less than 2 years	4,337	25.59 (16.40)	1,563	5.12 (1.88)
2 to less than 5 years	4,029	24.97 (16.24)	1,754	5.25 (1.73)
5 to less than 10 years	3,647	24.20 (16.05)	1,682	5.23 (1.81)
10 to less than 20 years	2,318	24.49 (16.22)	1,807	5.37 (1.77)
20 or more years	2,401	25.00 (15.79)	1,266	5.43 (1.81)

1997). Summary information for all variables measured at the person level is supplied in Table 2.

ANALYSES

Hierarchical linear models (Raudenbush, Bryk, Cheong, & Congdon, 2000) were estimated to examine the independent effects of national-level predictors of Hofstede's (2001) four cultural dimensions on extreme response style and acquiescent response behavior, controlling for the effects of the person-level predictors and taking into account the random variations across nations. Person-level predictors included in each model were gender, age, and length of current employment. An additional covariate, measured at the country level, was also included in these models: gross national product (GNP) per capita. This variable was added to adjust for known associations between national affluence and cultural orientations (Hofstede, 2001; Triandis, 1995; van Hemert et al., 2002). As with our other country-level indicators, per capita GNP was trichotomized for these analyses. Values assigned to each country are also presented in Table 1.

RESULTS

Table 3 presents hierarchical linear models that examine the predictors of extreme responding. As presented in the upper panel of the table (i.e., fixed effect model), two of four country-level indicators of cultural orientations were found to be independently associated with extreme response style. Consistent with two of our hypotheses, power distance and masculinity were each positively related to extreme responding behavior. However, uncertainty avoidance and individualism were not independently associated with extreme response style. Per capita GNP was also not associated with extreme responding. None of the

TABLE 3
Hierarchical Linear Models Evaluating Effects of Individual- and National-Level Measures on Extreme and Acquiescent Responding

<i>Fixed effect</i>	<i>Extreme Response</i> N = 18,308 (19 nations)		<i>Acquiescence</i> N = 8,062 (10 nations)	
	<i>Coefficient (SE)</i>	<i>t-ratio</i>	<i>Coefficient (SE)</i>	<i>t-ratio</i>
Intercept	-10.06 (15.62)	-.66	9.85 (1.01)	9.74***
Person-level predictors				
Gender (male)	-.26 (.28)	-.95	.08 (.06)	1.31
Age	.14 (.17)	.81	.04 (.03)	1.43
Tenure (length of current employment)	.31 (.18)	1.68	.09 (.04)	2.50*
Country-level predictors				
Power distance	9.63 (2.71)	3.55**	-.94 (.24)	-3.92*
Uncertainty avoidance	.59 (1.18)	.50	-.32 (.11)	-2.88*
Individualism	3.41 (2.40)	1.42	-.35 (.09)	-3.99*
Masculinity	5.80 (1.73)	3.36**	-.62 (.16)	-3.92*
GNP per capita	-2.30 (1.84)	-1.55	-.30 (.08)	-4.03*
<i>Random Effect</i>	<i>Variance Component (df)</i>	χ^2	<i>Variance Component (df)</i>	χ^2
Person-level variance	179.09		3.10	
Country-level (between countries)				
Average level	41.52 (13)	169.72***	.08 (4)	19.60**
Effect of gender	.74 (18)	35.32**	.02 (9)	20.99*
Effect of age	.36 (18)	35.22**	.00 (9)	7.82
Effect of tenure	.50 (18)	85.46***	.01 (9)	35.77***

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

person-level background characteristics were found to be predictive of extreme response behavior. However, random variation across nations in the effects of each of these variables remained significant, indicating that the effects of gender, age, and employment tenure were varied across nations. Gender differences in extreme response behavior, for example, varied significantly across nations, as did age and employment differences.

A second model that examined the effects of cultural dimensions on acquiescence is also presented in Table 3. As discussed earlier, the acquiescence measure was only available for a subset of the nations included in this data file. Consequently, this model is based on answers from 8,062 respondents in 10 countries only. All four of the Hofstede dimensions were found to be independently associated with this response style. Consistent with our hypotheses, persons from individualistic countries were less likely to engage in acquiescent responding. In addition, persons in nations rated highly on uncertainty avoidance were less likely to provide acquiescent responses. Respondents embedded in more masculine societies were also less likely to respond in an acquiescent manner. Contrary to our expectations, persons in high power distance countries were less likely to provide acquiescent responses. Length of current employment was also found to be positively associated with acquiescent response behavior. Background characteristics did not have significant fixed effects on acquiescent response behavior, but the effects of gender and length of employment were found to be significantly varied across countries. National GNP was also found to be negatively associated with acquiescence. That is, the lower the affluence of the country, the more individuals in the

country tended to manifest an acquiescent response style. This is consistent with previous findings reported by van Hemert et al. (2002).²

DISCUSSION

These findings expand our knowledge of the relation between culture and response biases. In particular, evidence is provided that two commonly observed response styles covary in a systematic manner with established dimensions of national culture across a broad set of nations. The associations between culture and extreme responding behavior were consistent with an expanded view of extreme response style behavior that recognizes the effects of cultural dimensions on the response behaviors of individuals. Specifically, we suggested that an extreme response style serves the goals of achieving clarity, precision, and decisiveness in one's explicit verbal statements, characteristics that are valued in masculine and high power distance cultures. Consistent with this, results also indicated that persons in cultures with high masculinity and with high power distance were more likely to select extreme response options on a questionnaire.

Acquiescent response style was found to have associations with each of Hofstede's cultural orientations. In particular, respondents from more individualistic nations were less likely to provide acquiescent answers, a finding supportive of Hofstede's (2001) observation that conformity is less common in highly individualistic societies. Acquiescence was also greater among respondents within less uncertainty avoidant countries. This finding is less clear. As was discussed earlier, it is not immediately obvious whether one would expect to find a positive or negative association between acquiescence and uncertainty avoidance. Our analyses, however, indicated an inverse relationship between national-level uncertainty avoidance and individual-level acquiescent behavior, a finding consistent with the expectation that acquiescence is a response style less common within cultures that reject ambiguity and uncertainty. Also consistent with our hypothesis, acquiescent reporting behavior was lower among individuals in more masculine cultures. Because countries high in masculinity value decisive, assertive, and daring action (Hofstede, 1998, 2001), it would appear that acquiescence is a communication pattern less likely to be favored or acceptable.

Of additional interest is the negative association between national power distance and acquiescence among individual respondents, a finding that is contrary to our original hypothesis. It is notable that, although acquiescence is an individual-level behavior, the available evidence suggesting a positive association with power distance is based on national-level ecological correlations (Hofstede, 2001, p. 96; Smith, 2004; van Hemert et al., 2002). Indeed, the direction of this correlation was confirmed when we examined the correlation between power distance and mean acquiescence scores among the 10 countries for which we have acquiescence data. That correlation was $r = .21$, a finding consistent with these previous studies. Our data thus suggest that power distance and acquiescence are positively correlated at the national level but negatively associated with one another in cross-level (i.e., HLM) analyses where acquiescence is examined as an individual behavior. We believe that, for the purposes of this study, the cross-level analyses provide a more appropriate representation of these data as each variable is examined at the level of analysis for which we wish to make inferences. That is, acquiescence is examined as an individual-level behavior that is influenced by national-level characteristics, which are represented by the Hofstede dimensions. Our contradictory findings from these various levels of analysis serve as a reminder that

caution should be exercised when examining individual behavior with aggregated data (Robinson, 1950).

Another important direction for further research will be to examine the degree to which potential relationships between cultural orientations and response behaviors may be modified by question characteristics. Certain question-response formats, for example, might amplify or suppress some of the hypothesized relationships discussed in this article. The relationship between uncertainty avoidance and extreme responding behavior serves as a case in point. Providing labels for the endpoints but not the midpoints of a response scale, a common practice in many countries, may be more problematic for respondents with an intolerance for ambiguity and may encourage them to select extreme response options, which are more clearly labeled. The effects of uncertainty avoidance on respondent reporting behavior may thus be stronger for some question forms than for others and might possibly account for the null findings observed here with regard to this hypothesized relationship. Recent research by Wong, Rindfleisch, and Burroughs (2003) has also identified cultural variability in the applicability of reverse-worded Likert-type questions, which they find to be problematic when administered to East Asian, but not Western, populations. Ironically, the use of reverse-worded items is a common procedure for reducing acquiescence bias (Watson, 1992; Wong et al., 2003). Consequently, further research designed to more systematically evaluate how culture interacts with question design features seems essential.

Although not a focus of this research, we note that the negative association in this study between GNP and acquiescence is consistent with the findings of van Hemert et al. (2002), who reported a negative correlation of $-.67$ ($p < .01$) between GNP and the Eysenck Lie Scale. As discussed earlier, van Hemert's analysis was based on national-level measures of acquiescence, whereas our study reflects a multilevel correlation between an individual-level measure of acquiescence and a national-level GNP measure. The consistent findings across these two studies that reflect differing levels of analysis suggest that further research concerned with the relationship between culture and acquiescence will need to account for national wealth.

There are several limitations to be considered in evaluating this research. First, the measures of acquiescent and extreme response behaviors were developed post hoc from survey questions originally collected for other purposes, primarily to evaluate employee satisfaction and attitudes. Although these measures have good psychometric properties, they are nonetheless unique to this data set and the generalizability of our findings cannot be assumed. The national-level measures of Hofstede's (2001) four important cultural dimensions may also be questioned, as they were initially developed on the basis of survey data collected more than 30 years ago. Although Hofstede's analyses were careful only to retain dimensions that he felt could be replicated, the age of these measures remains a source of concern, given the dynamic nature of culture (Chen et al., 2001; Hermans & Kempen, 1998; Zhang & Shavitt, 2003). We also note that Hofstede's measures are correlated and hence cannot be interpreted as independent of one another in these analyses. It is nonetheless noteworthy that these measures continue to demonstrate their relevance in analyses such as those presented here. The effects of other cultural dimensions, such as those described by Schwartz (1994) and Smith, Dugan, and Trompenaars (1996), should also be explored. Finally, we note that our employee samples may not be representative of the nations within which they were sampled, making cross-national comparisons problematic. Nonetheless, it is important to note that our sample also represents an important strength. Most significant, for assessing extreme response style, it incorporates large samples from 19 nations that

reflect considerable heterogeneity across each of the cultural dimensions of interest. By way of contrast, most of the literature concerned with extreme response and acquiescence artifacts is based on comparisons across two or, at most, three nations or ethnic subgroups.

To our knowledge, there have been few attempts to link Hofstede's exhaustively studied national dimensions of culture with the response styles examined in this study. This research consequently makes an important contribution to the small but expanding body of research concerned with investigating and understanding the mechanisms by which culture influences the collection of questionnaire data (Harkness, van de Vijver, & Mohler, 2003). Understanding how culture influences individual response behaviors remains a prerequisite for the sound practice of cross-cultural research.

NOTES

1. Prior analyses of these data by the second author found that within each country, a 55-item subset of the survey established construct equivalence across nations. Specifically, an exploratory factor analysis of data from all 19 countries combined revealed 12 underlying factors related to work environment and satisfaction. Confirmatory factor analysis models conducted separately by country showed that this 12-factor solution fit the data from each country adequately, as assessed by standard measures of model fit (i.e., GFI, AGFI, and CFI). Details of these analyses can be obtained from the authors.

2. Two reanalyses of these data were conducted. The first investigated the utility of employing the original metrics of the Hofstede measures, rather than the collapsed versions depicted in Table 1. As described earlier, these measures had each been collapsed for use as level two variables in this study's hierarchical analyses because the range of each greatly exceeded the number of available observations. When the original Hofstede values are nonetheless employed, only GNP was found to be associated with extreme response behavior, and only power distance, individualism, and GNP were found to be associated with acquiescent response styles. Also, it was noted that three of the nations included in these analyses, the Czech Republic, Hungary, and Poland, were not included as part of Hofstede's (1980) original study. Rather, the data used to estimate cultural scores for these nations were derived from unmatched sources other than the original IBM data (see Exhibit A5.3 in Hofstede, 2001, p. 502). A second reanalysis of the models presented in Table 3 was conducted with these three countries excluded. The revised model for extreme response style produced identical findings. The revised acquiescence model, however, did not converge due to the small number of degrees of freedom (and number of countries) available ($n = 7$) for this revised analysis.

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