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## Acquiescence and Extremity in Cross-National Surveys: Domain Dependence and Country-Level Correlates

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Likert-type rating scales are susceptible to response styles, such as acquiescence and extremity scoring. Although it is widely acknowledged that response styles can seriously invalidate findings of cross-cultural research, their theoretical underpinnings are hardly explored. The current study analyzed domain-dependency and country differences in acquiescence and extremity scoring in a large dataset of the International Social Survey Program. The hypothesis that response styles are more likely in domains with a high personal relevance compared to domains with a low personal relevance was tentatively confirmed. Correlations with various cultural, psychological, and economic variables were investigated. We found that acquiescence was negatively related to affluence, individualism, and well-being, while extremity was only negatively related to well-being. Positive associations were found between uncertainty avoidance and both acquiescence and extremity.

Responses to survey questions, particularly Likert-type rating scales, do not always reflect valid information about the targeted attitudes or behaviors. Responses may be influenced by characteristic ways respondents give answers to questions. Systematic differences in the data, as the result of this characteristic patterning of answers, are known as response styles. In the current study, two response styles were examined, namely acquiescence response style (ARS) and extremity response style (ERS) using data from the International Social Survey Programme (ISSP, [www.issp.org](http://www.issp.org)). Acquiescent responding, also called agreement bias, refers to a tendency to agree with questions, regardless of item content (e.g., Martin, 1964). Extremity scoring is the tendency to choose the endpoints of a rating scale, independent of item content (e.g., Hamilton, 1968).

Cross-cultural differences in ARS and ERS have been reported both in cross-national studies and in single-country comparisons of different ethnic groups (e.g., Baumgartner & Steenkamp, 2001; Grimm & Church, 1999; Van Herk, Poortinga, & Verhallen, 2004; Watkins & Cheung, 1995). However, the nature of the cross-cultural differences is not well understood (Fischer, Fontaine, Van de Vijver, & Van Hemert, this volume). Response styles can be dependent on characteristics of the culture, of the participants, of the instrument (e.g., the question format, wording and context) or their interaction (e.g., Hui & Triandis, 1989; Johnson & Van de Vijver, 2003; Schwarz, 1999). The current study focuses on characteristics of the culture and the instrument. An example of a country variable associated with response styles is conformity (e.g., Bond & Smith, 1996). Individuals and countries with higher scores on conformity are also more likely to display response styles in their responses to survey questions. In this view, response styles should be incorporated in models of cross-cultural communication differences. Smith (2004) endorses such a view when he speaks of acquiescence as “an

expression of the differing styles of communication that characterize specific national cultures” (p. 51).

The ISSP, which is a large multicountry survey that is conducted annually, has covered various topics in the past, thereby enabling us to investigate ARS and ERS in different content domains. Smith (2004) investigated the domain dependence of response styles and found that country estimates of acquiescence from different studies became more consistent when the content of the (Likert-type) items was more personally relevant. We hypothesize that country differences in ARS and ERS indices are larger in more personally relevant domains compared to less personally relevant domains. Furthermore, we expect that due to both response styles, within-country variance are smaller in the surveys involving more personally relevant domains.

We used aggregated country means of ARS and ERS indices on the different ISSP surveys as proxy for country level acquiescence and extremity, respectively. Results from studies with countries as the unit of analysis often differ from results with individuals as unit of analysis (Triandis, 2001). Thus, to investigate the influence of country characteristics, we addressed the patterning of correlates with aggregated ARS and ERS scores at the country level. The ISSP data set includes many countries which allows for a meaningful study of country-level correlates of response styles. Studies that correlate response style indices at country level with measures of cultural components can provide useful information for a theoretical framework necessary for an explanation and understanding of response styles. With a few recent exceptions (e.g., Baumgartner & Steenkamp, 2001; Van Herk et al., 2004), most cross-cultural comparisons of response styles are confined to two or three cultural groups, which limits generalizability. A few recent studies have studied the influence of cultural dimension with secondary analyses of large datasets representing large numbers of countries (e.g., De Jong, Steenkamp, Fox, & Baumgartner, 2008; Fischer et al., this volume; Johnson, Kulesa, Cho, & Shavitt, 2005; Mylonas, Pavlopoulos, & Georgas, 2008; Smith, 2004; Van Hemert, Van de Vijver, Poortinga, & Georgas, 2002). However, the results obtained thus far are not entirely consistent.

Some studies have addressed the relation between response styles and the Hofstede dimensions (Hofstede, 1980, 2001). For the present study, specific expectations were formulated at first for the Hofstede dimensions. Individualism is characterized by self-expression, independence, and a strong emphasis on individual opinions. Collectivism, on the other hand, is associated with modesty and interpersonal harmony. It can thus be expected that extreme responding is positively associated with individualism (e.g., De Jong et al., 2008; Smith & Fischer, 2008) and acquiescence is negatively related with individualism (e.g., Harzing, 2006; Johnson et al., 2005). Masculine cultures stress assertiveness and decisive behavior, which is likely to result in selecting the strongest options on a rating scale. The masculinity dimension is thus expected to correlate positively with ERS (e.g., De Jong et al., 2008; Johnson et al., 2005). Conversely, feminine cultures emphasize gentleness, modesty, and social harmony. These characteristics can be expected to be associated with more agreement; therefore, we expect a negative relation of ARS with masculinity. Acquiescence can be expected to correlate positively with power distance, because this dimension describes cultures high in power distance as more focused on authority and conformity (e.g., Harzing, 2006; Smith & Fischer, 2008). No specific relationship is expected between ERS and power distance, because findings thus far have been inconsistent (e.g., De Jong et al., 2008; Johnson et al., 2005; Smith & Fischer, 2008). Finally, cultures strong on uncertainty avoidance have many rules and intolerance for ambiguity. Choosing an endpoint of a rating scale can be seen as an expression of a clear, unambiguous opinion, so a positive relation is expected for ERS and uncertainty avoidance (e.g., De Jong et al., 2008). Here, no specific relation is expected for acquiescence.

In addition to the Hofstede dimensions, various other country-level variables regarding economic variables, well-being, values, and personality were examined to gain further insight in

the nature of cross-cultural differences in acquiescence and extremity. Johnson et al. (2005) reported a negative relation between GNP and acquiescence, but not for ERS. GNP is one of the most widely used indicators for affluence. These results give rise to an additional hypothesis that ARS is negatively related to affluence. Other country variables were chosen, because most of these have been used in previous studies of country-level psychological constructs which enables a comparison of results (Georgas, Van de Vijver, & Berry, 2004; Van Hemert et al., 2002).

## Method

### Data Source

ISSP data were included if items of a Likert-type format on an agreement scale were used, with response categories ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). This inclusion criterion led to the selection of eight questionnaires, covering five content domains: "Social Inequality" (ISSP1987, ISSP1992), "Religion" (ISSP1991, ISSP1998), "Family" (ISSP1988, ISSP1994), "National Identity" (ISSP1995), and "Role of Government" (ISSP1996) (the years following the acronym indicate the year in which the study was conducted). *Government* dealt with issues regarding the role of the government and its influence (e.g., "The average citizen has considerable influence on politics"). *Religion* involved items related to religious matters (e.g., "Looking around the world, religions bring more conflict than peace"). *National Identity* involved items about national pride and opinions about immigration (e.g., "I would rather be a citizen of (R's country) than of any other country in the world"). *Social inequality* involved questions about the (dis)approval of inequality in society (e.g., "Large differences in income are necessary for (R's country) prosperity"). Finally, *Family* related to questions about the arrangement of the household (e.g., "All in all, family life suffers when the woman has a full-time job"). The number of countries represented in these data ranged from 9 (ISSP88) to 31 (ISSP98), with European countries constituting the largest number. The analysis of domain dependence is based on a subset of 16 countries with values for all five different domains: Australia, Bulgaria, Canada, Czech Republic, East-Germany, Hungary, Italy, New Zealand, Norway, Poland, Russia, Slovenia, Sweden, United Kingdom, USA, and West-Germany. Sixteen countries was the largest possible number to maintain equal group sizes between the five domains.

Items in the ISSP are designed to adequately cover domains but they are not designed to constitute factorially pure scales with high internal consistencies. The possibly poor psychometric properties are usually no problem for response style research. It is indeed common in such research to use items about heterogeneous topics, because ARS and ERS are often assumed to be independent of item content. Given our interest in different kinds of domains, we conducted psychometric analyses. For all eight questionnaires, Cronbach's  $\alpha$  coefficients were computed per country; most values were well above .60. Data from the few countries with values below .40 were removed. The unifactorial exploratory factor analysis yielded factor scores that explained between 22.53% and 27.63%.

*Response style indices.* There are numerous ways in which an acquiescence index can be computed (cf., Johnson et al., 2005; Marín, Gamba, & Marín, 1992; Narayan & Krosnick, 1996; Smith, 2004; Watson, 1992). Van Herk et al. (2004) used an index for acquiescence based on bipolar scales. We computed proportions of acquiescent or non-acquiescent responses to positively and negatively formulated items separately, and their mean was taken as the acquiescence index. This index has a range from -1.00 to 1.00, and the corresponding formula reads as follows:

$$ARS_{weighted} = \{ [(NP_{pos} - NP_{neg}) \div NP_{tot}] + [(NN_{pos} - NN_{neg}) \div NN_{tot}] \} \div 2, \quad (1)$$

where  $NP$  and  $NN$  represent positively and negatively formulated items respectively, the subscript  $pos$  represents the count of positive responses (score 1 and 2), the subscript  $neg$  the count of negative responses (score 4 and 5), and the subscript  $tot$  stands for the total number of items.

A similar procedure was followed to calculate a weighted index for extremity responding:

$$ERS_{weighted} = [(NP_{ext} \div NP_{tot}) + (NN_{ext} \div NN_{tot})] \div 2, \quad (2)$$

where *NP* and *NN* represent positively and negatively formulated items respectively. The subscript *ext* represents the count of extreme responses (score 1 and 5), and the subscript *tot* stands for the total number of items.

The weighted index of extreme responding was based on the calculation by Bachman and O'Malley (1984). The index ranges from .00 to 1.00, with values close to 1.00 denoting a high incidence of extreme responding. For both ARS and ERS individual scores were computed. Most of the analyses reported below involve the means and standard deviations of these indices at country level. The latter is an index for within-country variation of response styles.

*Country-Level Variables.* Ecosocial, economic, and psychological variables were taken from Van Hemert et al. (2002), unless described otherwise. Countries with missing values were left out of the analyses using pairwise deletion. As a consequence, reported correlations can be based on different sample sizes (ranging from 4 to 27 countries). *Ecosocial factors* came from a study by Georgas and Berry (1995) who factor analyzed several indicators to obtain five factors: *Economy factor* (e.g., per capita measures of gross national product), *Education factor* (e.g., total adult illiteracy and pupil-teacher ratio in the first level), *Population factor* (e.g., life expectancy at birth and infant mortality and population increase), *Ecology factor* (e.g., highest and lowest monthly temperatures), and (*Mass-Communication factor* (e.g., per capita number of televisions). Finally, a factor solution for all five ecosocial factors was used as an indicator for *affluence* (explaining 69.7% of variance).

*Economic* variables included were the GINI coefficient (which measures income inequality; a higher value on this index denotes more inequality; World Bank, 1999), Purchasing Power Parity (PPP; this index indicates the price level of a fixed basket of consumer goods and services in US dollars; World Bank, 1999) and the Human Development Index (HDI; this index measures development by combining life expectancy, adult literacy rate, and gross domestic product per capita indices in relation to other countries; United Nations, 1996).

Different *psychological variables* were used. Data on *Individualism*, *Masculinity*, *Power Distance*, and *Uncertainty Avoidance* were taken from Hofstede (1980, 2001). Hofstede formulated four dimensions of values. Individualism refers to a society where people are independent and expected to look after him or herself. The opposite, collectivism describes societies as interdependent and in which people are integrated in strong, cohesive groups. The masculinity-femininity dimension refers to the degree a society is governed by masculine values (assertive and competitive) versus feminine values (modest and caring). Power distance reflects the degree of inequality within a society and to what extent this inequality is accepted by less powerful members. Uncertainty avoidance deals with tolerance for uncertainty and ambiguity. This dimension describes societies as highly regulated with strict laws and security measures (uncertainty avoidant) versus tolerant and few rules (uncertainty acceptant).

For *subjective well-being*, both the indices from Diener and colleagues (Diener, Diener, & Diener, 1995; Diener & Diener, 1995), and Inglehart (1997) were used. The data from Diener were based on scores from several surveys. Inglehart's measure of subjective well-being was derived from the World Values Survey (Inglehart, 1993, 1997). Subjective well-being refers to how people evaluate their lives. The evaluations are in the form of life satisfaction and positive moods. Both indices are country means of individual scores.

Schwartz (1994) formulated seven *value dimensions*. Georgas et al. (2004) factor analyzed the country means of these seven value dimensions. Two bipolar factors emerged, labeled autonomy and hierarchy. The first factor describes a value distinction between an emphasis on conservatism versus an emphasis on intellectual and effective autonomy. The second factor refers to harmony versus mastery and hierarchy.

*Eysenck Personality Questionnaire.* Country means on the four scales of the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975), corrected for scale length, were used as personality indices. The four scales are Psychoticism (EPQ-P), Extraversion (EPQ-E), Neuroticism (EPQ-N), and Social Desirability (EPQ-L). These data are based solely on the 1975 version of the EPQ and collected from 153 different studies, as described in more detail in Van Hemert et al. (2002).

## Results

### *Analysis of Domain Specificity*

We first established the level of personal involvement of the domains by administering a questionnaire to 41 Dutch respondents. The questionnaire consisted of a representative selection of items from four of the domains, with a total of 40 items. The ISSP96 (government) could not be included because this survey was not administered in the Netherlands. Each item was rated for personal relevance on a seven-point Likert scale (with a range from totally not personally relevant to totally personally relevant). A one-way repeated measures ANOVA was conducted to compare scores on the four domains. There was a significant effect for domain ( $F_{3, 38} = 15.47, p < .001$ ). Post-hoc analyses (paired  $t$  tests with Bonferroni correction) revealed that the mean scores of both the social inequality ( $Mn = 4.24$ ) and family ( $Mn = 4.21$ ) domains were significantly larger than religion ( $Mn = 3.57$ ) and national identity ( $Mn = 3.51$ )—all  $p < .05$ . This result implies that both the social inequality and the family domains are perceived as personally more relevant compared to the other two domains.

In the ISSP data set, we expected to find larger country differences and smaller within-country variation in more personally relevant domains (i.e., family and social inequality). For country-level means and standard deviations for both ARS and ERS a multivariate analysis of variance model was applied. The four dependent variables were the mean and standard deviation of aggregated ARS country scores and the mean and standard deviation aggregated ERS country scores, while domain was the independent variable. The multivariate main effect of domain was significant ( $F_{16, 221} = 10.71, p < .001$ ). Both the means and standard deviations of acquiescence differed significantly across domains ( $F_{4, 75} = 4.74, p < .01$ , and  $F_{4, 75} = 49.01, p < .001$ , respectively). The mean scores for extremity also differed significantly across domains ( $F_{4, 75} = 2.77, p < .05$ ), but the standard deviation scores failed to show a significant difference, ( $F_{4, 75} = 0.94, ns$ ). The partial eta squared value of the aggregated standard deviation scores for acquiescence was .72, which is a very large value. Partial  $\eta^2$  for acquiescence mean scores was .19, for extremity mean and standard deviation scores, partial  $\eta^2$  values were .13 and .05 respectively.

Results for post-hoc Tukey (HSD) tests are summarized in Table 1. Cell values represent the means of the respective aggregated 16-country scores. The results indicate that across all countries, the social inequality and national identity domains showed the highest acquiescence scores, and the government domain the lowest. For the aggregated *SD* scores, the family domain had the lowest value. It can be concluded that acquiescent responding is more homogeneous within countries when questions are more personally relevant. A similar pattern of significant differences was not found for ERS. No significant differences between the domains were found for either mean or *SD* scores on extreme responding.

The domain specificity of the between-country differences was further analyzed using partial  $\eta^2$  values in the multivariate analysis of variance described above; partial  $\eta^2$  values are given in Table 2. With the exception of the low value of the social inequality domain of .06, the results are in line with our expectation for both response styles. These findings support our hypothesis about the domain-dependence of response styles.

**Table 1.** Means for Aggregated Within-Country Values of Mean (*Mn*) and Standard Deviation (*SD*) for Five Domains

Style	Dependent Variable	Social Inequality	Family	Religion	National Identity	Government
Acquiescence	<i>Mn</i>	.20 <sup>a</sup>	.15	.13	.19 <sup>a</sup>	.07 <sup>b</sup>
	<i>SD</i>	.32 <sup>a</sup>	.24 <sup>b</sup>	.26 <sup>c</sup>	.28 <sup>c</sup>	.30 <sup>a</sup>
Extremity	<i>Mn</i>	.26	.30	.31	.25	.23
	<i>SD</i>	.21	.21	.22	.22	.21

*Note.* Significant differences (Tukey's test for post-hoc comparisons) are denoted by different superscript indices within each row.

**Table 2.** Effect Size Measures: Proportion of Variance in Response Style Accounted for Across the 16 Countries

Topic	Year	ARS	ERS	<i>Mean</i>
Social Inequality	1992	.06	.20	.13
Family	1994	.23	.17	.20
Religion	1998	.12	.03	.08
National Identity	1995	.15	.08	.12
Government	1996	.04	.08	.06
<i>Mn</i>		.12	.11	.12

*Note.* Cohen's cutoff values of effect sizes: .01 (small), .06 (moderate), .14 (large). ARS = Acquiescent response Style. ERS = Extreme Response style.

#### *Country-Level Correlates of ARS and ERS*

We calculated correlations between country mean ARS and the ecosocial, economic, and psychological variables. The same was done for country mean ERS. This resulted in a series of correlations, one for each questionnaire. The strength of the correlations mentioned in the two sections below is based on the median values of the eight correlations pertaining to the respective questionnaires. We calculated median values, presented in Table 3, instead of means, because the median is more robust in the presence of outliers.

**Acquiescence.** Among the ecosocial factors a consistent, negative relationship was found between acquiescence and the economy, education, and communication factors. These results indicate that higher economic development, educational level, and mass communication in a country comes with less acquiescent responding. A positive, moderate relationship was found with the population factor. This indicated that more populated countries show more acquiescence. The negative relation between acquiescence and the affluence factor indicates that more affluent countries show less acquiescence. For HDI, PPP, and to a lesser extent GINI, also clear negative relations with acquiescence were found. In all, we clearly found that higher economic standards of a country are associated with a less acquiescent response style.

Consistent with our hypothesis, a clear negative relationship was found for the individualism measure. Power distance showed a fairly consistent pattern of positive correlations, but only showed a modest median value. Uncertainty avoidance was found to be positively related with acquiescence whereas the Diener and Inglehart subjective well-being variables were both negatively related with acquiescence. Both Autonomy and Hierarchy (Schwartz Value Survey) showed a consistent small negative relationship with acquiescence. There was a tendency for countries with high scores on autonomy and hierarchy to score lower on acquiescence.

**Table 3.** Median Correlations (Pearson) between Response Style Scores and Country-Level Variables

Country Variable		ARS	ERS
Ecosocial Factors	Economy	-.47	-.05
	Education	-.40	-.16
	Population	.31	-.15
	Ecology	.26	.20
	Communication	-.47	-.06
	Affluence	-.48	-.00
Economic Variables	HDI	-.52	-.21
	PPP	-.50	-.29
	GINI	-.20	-.37
Hofstede's Measures	Individualism	-.55	-.29
	Masculinity	.17	.25
	Power Distance	.25	.06
	Uncertainty Avoidance	.37	.64
Subjective Well-being	Diener	-.46	-.55
	Inglehart	-.46	-.53
Schwartz's Values	Autonomy	-.31	-.15
	Hierarchy	-.41	-.13
Eysenk Personality Questionnaire	EPQ-P	.24	.04
	EPQ-E	-.29	-.32
	EPQ-N	.18	.07
	EPQ-L	.35	.53

ARS = Acquiescent response Style. ERS = Extreme Response style. HDI = Human Development Index. PPP = Power Purchasing Parity. GINI: a measure of income inequality. EPQ: Eysenck Personality Scale which has the following subscales: P = Psychoticism, E = Extroversion, N = Neuroticism, and L = Lie Scale (social desirability).

**Extremity.** For the ecosocial factors including the affluence factor no relation was found (all median values  $|r| \leq .20$ ). These findings indicate that unlike acquiescence, extreme responding is not dependent on any ecosocial factor.

As hypothesized, a clear, positive relation was found for uncertainty avoidance. This finding implies that extreme responding is higher in countries that have a low tolerance for uncertainty and ambiguity, an expected outcome. A fairly consistent patterning of positive correlations between masculinity and ERS is in support with our hypothesis, but the median value remained modest at the most.

Finally, extreme responding seems to be low when country scores on subjective well-being are high. When country scores are high on EPQ-E, extreme response style seems to decrease. EPQ-L was also positively correlated with extremity (ERS) scores at the country level, so extremity and social desirability seem to be positively related.

### Discussion

The first topic we addressed in this study was domain dependency. We expected country differences in ARS and ERS indices to be larger in more personal and sensitive domains. This hypothesis was tentatively confirmed. The results show that country differences in response styles tended to be larger in more personally relevant domains (i.e., family and social inequality), while within country variation is smaller compared to other domains.

Additionally, we looked at the patterns of correlations between country level measures of ARS, ERS and several ecosocial, economic and psychological indices. The main finding is the observed negative association of acquiescence with affluence, while no such association

was found for extremity. Moreover, we found that both ARS and ERS are negatively related to well-being. ARS was found to be negatively related to individualism, which is in line with previous reports and our hypothesis. It should be noted that we observed a negative correlation between individualism and ERS, but correlations were quite low. Nonetheless, the patterning was fairly consistent. However, Johnson et al. (2005) did not find any relation between extremity and individualism. The inconsistencies in findings point to the need for further studies. In line with our hypothesis, we found a positive relation between ERS and uncertainty avoidance. This supports our argument that intolerance for ambiguity is related to a preference for using the endpoints of a rating scale. However, we observed an apparent positive relationship between ARS and uncertainty avoidance as well. Previous studies did not find any relation (Smith, 2004) or found a negative relation (Johnson et al., 2005). Although we did not expect this result, a possible rationale for our positive relation could be that countries that show high scores on uncertainty avoidance tend to rely more on external control and procedures, which could be associated with more acquiescence and conformity. Our hypotheses about the associations between masculinity and ERS were partially supported. The hypothesized relation between femininity and ARS was not supported at all. In sum, these relations remain largely inconclusive. The same holds for the assumed positive relationship between ARS and power distance, which was only weakly supported with a fairly consistent patterning but modest median value.

Our study also provided evidence that instrument-related variables can be important antecedents of response styles. Domains with more personal relevance tend to show more susceptibility to response styles. Particularly in these domains, acquiescence and extreme responding can seriously affect cross-cultural questionnaire data. We agree with Smith (2004) who argued that ARS and ERS are personally relevant biases. Our findings also suggest that the acquiescence and extremity scoring are not nuisance variables that should be avoided and eliminated, but more likely they represent communication styles of individuals and cultures. If, as argued here, the expression of these response styles are influenced both by individual and cultural factors, it would therefore be interesting to look at specific interactions between personally relevant topics and cultural dimensions. Our data did not permit us to investigate such interaction effects, but it seems that tendencies to answer in specific ways increase as a result of the interaction between cultural dimensions such as individualism, well-being, power distance, masculinity, and uncertainty avoidance, and the degree of personal relevance of the items.

Despite the wealth of data that the ISSP questionnaires offer, there are some drawbacks which need to be considered as well. First, the ISSP questionnaires were not developed as unifactorial psychometric scales. Construct equivalence was therefore not studied here. Reliabilities (Cronbach's  $\alpha$ ) of the questionnaires were generally quite satisfactory in the present study; yet, the factor analyses revealed relatively low eigenvalues of the first factor. However, although the domains used in this study are certainly not based on approved statistical grounds, they are nevertheless informative, meaning that the employed survey items are strongly related to one another. A stricter test of our hypotheses would have required stronger first factors.

Second, it is important to realize that the measures of acquiescence and extremity were not based on direct measures of these concepts, but rather constructed post hoc from data that were primarily designed for other purposes. It should be acknowledged that this way of computing response styles indices leads to indirect and presumably suboptimal measures.

Much still needs to be investigated about the nature and the impact of both extremity and acquiescence. Acquiescence and extremity clearly do exist and exhibit culture-related properties. However, our understanding of the nature of cross-cultural differences in these response styles is still largely incomplete. Many new studies will have to be conducted to build up a coherent set of knowledge about the relation between response styles and cultural factors.

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