Toward a unification of acquiescent, extreme, and midpoint response styles: A multilevel study

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Abstract

From a cross-cultural perspective, we studied the psychological meaning of a generalized response style that combines acquiescent, extreme, and midpoint response styles. Individual- and country-level indexes of the three specific response styles were constructed from eight multicountry surveys for correlation and multilevel analyses. At both levels, we confirmed a general response style factor with a positive loading of extreme response style, a negative loading of midpoint response style, and acquiescent response style in between. This general response style refers to a communication filter that moderates or amplifies expressions and it is associated with both individual and cultural factors. At the country level, the general response style was negatively related to the socioeconomic development and the percentage of atheists and positively related to aggregated values and personality traits pertinent to "fitting in" and avoidance of ambiguity. At the individual level, the general response style was positively associated with age and negatively associated with education. We conclude that integrating specific response styles to a general response style can help to create consistency in findings across styles and studies. Implications for cross-cultural management research and practices are discussed.

Keywords

Acquiescence, extremity, general factor, midpoint responding, multilevel analysis

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Response styles are defined as a systematic tendency to use certain categories of the answering scale on some basis other than the target construct (Cronbach, 1950). They can impose validity threats in surveys, especially in cross-cultural studies where they can be sources of country differences in scores that are undesirable yet difficult to control (e.g. Bachman and O'Malley, 1984). Self-report measures, prone to the influences of response styles, continue to be the most frequently used measures in cross-cultural management research (e.g. Donaldson and Grant-Vallone, 2002). Analyzing managerial data from 24 countries, van Emmerik et al. (2010) argued that cultural differences measured in the GLOBE leadership project and personality measures may represent culturally endorsed styles of responding. Therefore, investigating the nature of response styles can help cross-cultural management researchers establish more accurate measurements and derive more valid results.

We targeted the three most commonly studied response styles: acquiescent response style (ARS), extreme response style (ERS), and midpoint response style (MRS). ARS is defined as the tendency to agree rather than disagree to propositions in general; ERS is conceptualized as the tendency to endorse the most extreme response categories regardless of content; and MRS refers to the tendency to overuse the midpoint of a scale (Baumgartner and Steenkamp, 2001). There are two divergent views on response styles. The first is the traditional and still dominant perspective in which response styles are treated as measurement errors that should be avoided and eliminated as much as possible. An alternative view holds that response styles are a basic way of communicating about oneself, such as the tendency to amplify responses among Latin Americans and to moderate responses among East Asians. In the latter perspective, response styles are rooted in the values and personality of respondents and their cultures (Gibbons et al., 1999; Smith, 2004, 2011); corrections for response styles may truncate valuable information embedded in the scores by removing reliable individual and cross-cultural differences (Fischer, 2004).

Response styles are particularly important in cross-cultural large-scale surveys. Analyzing data from the Teacher and Learner International Survey involving 23 countries (OECD, 2009), Vieluf et al. (2013) found that country differences in self-reported teacher self-efficacy could be largely explained by differences in response styles (notably ERS). Despite the prevalence of response styles and the more than 60 years that these have been studied, the psychological meaning of these styles is still unclear. The lack of progress may be a consequence of the emphasis on the need to remove or at least control for these response styles in the past. In addition, studies of response styles did not always show converging results, partly due to different operationalizations of these styles. For example, agree responses were used in some studies as indicators of ARS and in some studies as part of ERS. We argue that integrating specific response styles to a general response style (GRS) may help create consistency in findings. Using both indirect and self-report measures of ARS, ERS, and MRS among members of five ethnic groups in the Netherlands, He and Van de Vijver (2013) found a GRS with a positive loading of ERS and negative loadings of ARS and MRS at the individual level, which showed sufficient measurement equivalence across groups. This GRS had a strong association with "desirable" personality traits (i.e. agreeableness, conscientiousness, extroversion, and openness).

In the present project, we gathered empirical evidence to examine whether this theoretically expected GRS can be found at both individual and country levels, and how this GRS is correlated with relevant country-level characteristics in the first study, followed by a multilevel analysis in the second study. Our study has two novel aspects. Firstly, we set out to replicate the GRS at the individual level and extend this to country level with data from multiple large scale international surveys. Secondly, our study examined more surveys and country-level characteristics than previous

studies. In the next section, we review the interrelatedness of the three response styles across cultures and postulate hypotheses in regard to the GRS with country-level characteristics.

Survey response styles across cultures

Interrelatedness of ARS, ERS, and MRS

At the individual level, evidence suggests that ARS, ERS, and MRS are interrelated. MRS, the tendency to be evasive with a prevention focus, is negatively associated with ERS, the tendency to be outspoken with a promotion focus (Van Vaerenbergh and Thomas, 2012). Some studies reported a weak positive association between ARS and ERS (e.g. Van Herk et al., 2004) due to the partly shared operationalizations of these two styles, in which agree responses are part of ARS and ERS scores. He and van de Vijver (2013) found a weak negative association between ARS and ERS, using non-overlapping porportion of responses. With data from various multicountry surveys, we expected to find the same patterning of a GRS at the individual level (i.e. He and van de Vijver, 2013).

At the country level, Smith (2011) reported a negative correlation between ERS and MRS and a positive correlation between ARS and ERS; yet the association between ARS and ERS may be overrated because of their partly shared operationalizations. It is reasonable to expect cross-level isomorphism (i.e. structural equivalence at various levels of aggregation) of their interrelatedness (Van de Vijver and Poortinga, 2002). The dimension that goes from ERS to MRS would represent the tendency to amplify or moderate responses (e.g. Minkov, 2009). We tested the hypothesis:

> **Hypothesis 1**: At both individual and country levels, there is a GRS with a positive loading of ERS and negative loadings of ARS and MRS.

Country-level correlates of response styles

Various social indicators, aggregated values, and personality traits show or can be expected to show relationships with response styles. These are reviewed below.

Socioeconomic development. Like many other psychological constructs (e.g. Georgas et al., 2004), variations in response styles are associated with a cluster of affluence-related social indicators, such as the human development index (HDI), literacy rate, democracy, and (absence of) corruption (e.g. Van Dijk et al., 2009). The common denominator of these social indicators with relevance for response styles may be education and opportunities in life. More educated individuals may prefer to express their views in a more nuanced manner than individuals with less education, resulting in a lower level of amplifying response styles. We tested the following hypothesis:

> **Hypothesis 2**: The GRS is negatively associated with socioeconomic development at the country level.

Although our primary interest is in the GRS, we also tested this hypothesis (and the following hypotheses) for the other response style indexes. This means that the hypothesis implicitly predicts a negative association of socioeconomic development with ERS and a positive association with ARS and MRS. We test the hypothesis about the GRS as well as the implied hypotheses, for the following hypotheses.

Atheism and religious denomination. It has been argued that affinity to religion is linked to intolerance of ambiguity (Marshall and Lee, 1998). In countries where the majority of the population call themselves religious, people may tend to utilize higher level of response styles as a means of ambiguity reduction. Following this argument, we hypothesized:

Hypothesis 3: The GRS is negatively related to the percentage of atheists at the country level.

Values. Previous studies found that response styles were positively related to a cluster of collectivistic values, including collectivism, embeddedness, and traditionalism (vs. secularism) (e.g. Smith, 2004; Van Dijk et al., 2009). Collectivistic cultures are characterized by an emphasis on group relationship and high context communication (Hofstede, 2001). Embeddedness is related to the levels that individuals identify themselves with the group, and the importance to maintain group traditions and restrain potentially disruptive action (Schwartz, 2009). The transition from traditional to modern and postmodern societies is accompanied by a higher endorsement of secular values, which may link this transition to a decreased utilization of response styles (Inglehart and Welzel, 2005).

Hypothesis 4: The GRS is positively related to collectivistic values at the country level.

Monumentalism (vs. flexumility) is characterized by national pride, acceptance of norms imposed by authority, and willingness to show superiority through interpersonal competition (Minkov, 2007). Smith (2011) found that ARS and ERS were positively correlated with monumentalism, whereas MRS showed a negative correlation. It seems that people in countries with high monumentalism orientation tend to amplify instead of moderating their responses. Based on Smith's work, we proposed:

Hypothesis 5: The GRS is positively associated with monumentalism at the country level.

Personality characteristics. Equivalence of the five-factor model of personality at individual and country levels has been established (e.g. McCrae et al., 2005); therefore, we can use individual-level findings to formulate expectations about country-level associations between personality profiles and response styles. He and Van de Vijver (2013) found that the individual-level GRS was positively associated with agreeableness, conscientiousness, extroversion, and openness and negatively related to neuroticism. Van Dijk et al. (2009) reported a positive correlation of ARS and ERS with extroversion. Harzing (2006) also found that extroversion was positively related to response styles in a consistent way. We hypothesized:

Hypothesis 6: The GRS at the country level is positively associated with agreeableness, conscientiousness, extroversion, and openness, and negatively related to neuroticism.

The original conceptualization of social desirability as impression management shares important similarities with response styles (Paulhus, 1991), as both can be viewed as filters that are applied when generating item responses (e.g. He and Van de Vijver, 2013). Van Dijk et al. (2009) reported a positive correlation of ARS and ERS with the Eysenck Lie Scale, from which we speculated that these response styles would be akin to social desirability:

Hypothesis 7: The GRS at the country level is positively associated with social desirability.

Study 1

In the first study, we set out to identify the GRS, using ARS, ERS, and MRS indexes constructed from eight cross-national surveys at both individual and country levels and examined the correlates of the GRS with various country-level characteristics.

Method

Data sources. We located eight multinational surveys with over 30 countries and with national representative samples. These surveys included European Value Survey (EVS, 2011), six waves of International Social Survey Programme (ISSP2003, 2004, 2005, 2006, 2007, and 2008 from www.issp.org), and World Value Survey (WVS, 2009). Detailed information of the surveys and uses of items for response style indexes are presented in Table 1. Participating countries in each survey varied in socioeconomic development levels (e.g. the mean level of HDI for participating countries in WVS ranged from .31 to .94 with a mean of .70).

Measures of ARS, ERS, and MRS. We computed indicators of ARS, ERS, and MRS, using a variety of items with Likert answer scales in each survey. Item content included attitudes toward personal values or beliefs (e.g. identity, leisure, and religiosity) and attitudes toward social issues (e.g. citizenship and governance). The average interitem correlations among items for each response style index ranged from −.01 to .23, indicating sufficient content heterogeneity. Different items were used to compute each index. The nonoverlapping items used in each response style index ensured data independency in testing the interrelatedness of response styles. The codes of items used to construct each response style in each survey are presented in the Appendix.

   ARS scores were derived from a set of items with five response options, ranging from 1 (*strongly agree*) to 5 (*strongly disagree*); the frequency of choosing 2 (*agree*) was taken as an ARS score (1 *strongly agree* was not used to avoid the confounding with ERS). ERS was derived from another set of items with various response options (e.g. *not at all* to *very much*; *not important* to *extremely important*) other than *agree–disagree*; the frequency of choosing the end points (e.g. 1 and 5 in a 5-point scale) was taken as an ERS score. MRS was constructed with a third set of items with various response options; the frequency of choosing the middle category (e.g. 3 in a 5-point scale) was taken as an MRS score. For each style, we first calculated the individual index for each respondent and then averaged the index across members of the same country to obtain a country-level index.

Measures of country-level variables

Socioeconomic development. The socioeconomic development of a country is measured here by the HDI, the Gini index, and democratization. The HDI is a composite measure of the average achievements in a country in three basic dimensions of human development: a long and healthy life, access to knowledge, and a high standard of living (United Nations, 2010). Data were available for 194 countries (denoted here by $N = 194$). The Gini index measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution ($N = 176$) (the World Bank, 2011). Index of democratization, the entitlement of ideologically and socially different groups to compete for political power, was obtained from the Polyarchy Index of Democracy ($N = 184$) (Vanhanen, 2007).

Table 1. Overview of surveys.

Survey	N of countries	N of respondents	N of items	N of Likert points	Average interitem correlation
EVS: social values	46 (24)	65,911 (36,892)			
ARS			14	5	.07
ERS			27	4	.18
MRS			13	5	.08
ISSP2003: national identity	35 (21)	45,993 (29,446)			
ARS			5	5	−.01
ERS			20	4	.19
MRS			24	5	.08
ISSP2004: citizenship	38 (25)	52,550 (35,977)			
ARS			9	5	.05
ERS			8	7	.20
MRS			8	7	.18
ISSP2005: work orientation	31 (19)	43,440 (26,842)			
ARS			18	5	.09
ERS			9	5	.07
MRS			9	5	.06
ISSP2006: role of government	33 (21)	48,641 (31,319)			
ARS			8	5	.05
ERS			14	5	.03
MRS			14	5	.04
ISSP2007: leisure, time, and sports	34 (22)	49,729 (31,740)			
ARS			5	5	.06
ERS			11	5	.10
MRS			10	5	.12
ISSP2008: religion	40 (27)	59,986 (39,855)			
ARS			9	5	.07
ERS			17	4	.17
MRS			12	5	.11
WVS: world values	48 (25)	66,312 (35,527)			
ARS			5	5	.15
ERS			16	4	.11
MRS			4	5	.23

EVS: European values survey; ISSP: international social survey programme; WVS: world values survey; ARS: acquiescent response style; ERS: extreme response style; MRS: midpoint response style.
Note. Numbers in parentheses indicated the sample sizes in study 2.

Atheism and religious denomination. Religious denomination was measured by the percentage of people who believe in God and the percentage of nominal adherents who celebrate traditional religious holidays (Wikipedia, 2007). The percentages of atheists, Muslims, and Christians were calculated for 220 countries.

Aggregated psychological profiles. Individualism scores were taken from Hofstede (2009) ($N = 70$). Embeddedness scores were taken from Schwartz's seven culture-level value dimensions (Schwartz,

2009) ($N = 75$). The dimension scores of Traditional Authority versus Secular Rational Authority were extracted from Inglehart's value dimensions (Inglehart et al., 2004). Higher scores on the dimension signified higher levels of secularism ($N = 80$). Monumentalism scores were taken from Minkov (2007). Higher scores on this dimension refer to countries that are proud and self-consistent, whereas countries with lower scores exhibit the opposite tendency to show humility and flexibility ($N = 80$).

Scores of Agreeableness, Conscientiousness, Extroversion, Openness, and Neuroticism were taken from the Big Five Inventory ($N = 56$) (Schmitt et al., 2007). Scores of Social Desirability were taken from the Lie Scale of the Eysenck's Personality Questionnaire (Van Hemert et al., 2002). The Lie Scale measures a tendency to fake good, which is a central aspect of social desirability ($N = 34$).

Finally, we also included citizen means of the five belief dimensions in Social Axioms from Leung and Bond (2004) for 39 countries, and the nine value dimensions from GLOBE (House et al., 2004) for 62 countries for exploratory purposes.

Results

We describe the results in two parts. Firstly, we report the analysis to identify the GRS, based on the ARS, ERS, and MRS indexes. Secondly, we correlated this GRS (i.e. the factor score) as well as each response style separately with country-level characteristics described below per domain: socio-economic development, atheism and religious denomination, and aggregated values and personality.

Derivation of the GRS

The identification of the GRS was addressed in an exploratory factor analysis with the ARS, ERS, and MRS indexes per survey. At the individual level, principal component analyses revealed a single factor in each survey; the explained variance ranged from 42% (WVS) to 46% (EVS). In all the cases, ERS loaded positively (loadings ranged from .19 to .82), and ARS (loadings ranged from $-.04$ to $-.76$) and MRS (loadings ranged from $-.47$ to $-.82$) loaded negatively on the factor.

At the country level, a single factor was extracted in each survey with explained variance ranging from 47% (WVS) to 65% (ISSP2005). In all the cases, ERS loaded positively (loadings ranged from .77 to .91) and MRS loaded negatively (loadings ranged from $-.75$ to $-.96$) on the factor, whereas loadings of ARS varied across surveys (loadings ranged from $-.56$ to .55). The country-level GRS scores from each survey can be obtained from the first author.

We computed Tucker's ϕ coefficients to assess the similarity of the individual- and country-level factor solutions and found an average value of .90 (with a range from .79 to 1), which suggested an acceptable multilevel equivalence of the GRS (Van de Vijver and Poortinga, 2002). Hypothesis 1 was confirmed; the three response styles can be viewed as indicators of an underlying GRS with a positive loading of ERS and a negative loading of MRS (with ARS in between). Yet the analyses also clarified that the three styles are not interchangeable indicators and each has some uniqueness. We employed the factor score from each survey as the GRS at both individual and country levels.

Correlation with country-level variables

We correlated the country-level GRS, ARS, ERS, and MRS in each survey with the country-level variables. Given the large number of correlation coefficients computed, we restrict the presentation to the mean correlations (Table 2), based on the Fisher transformation and back transformation

across the eight data sets (Silver and Dunlap, 1987). The significance level of these means was established in bootstrapping the means of the Fisher-transformed correlations.

Socioeconomic development. We found that the GRS was negatively correlated with HDI and democratization, and positively correlated with the Gini index, suggesting that the GRS was higher in countries with lower socioeconomic development. Hypothesis 2 was supported.

Atheism and religious denomination. As hypothesized, GRS was negatively associated with the percentage of atheists and positively related to the percentage of Christians and Muslims, providing further support for the role of religion in response style use. Hypothesis 3 was supported.

Aggregated values. Individualism and secularism showed negative correlation with the GRS; embeddedness showed a positive correlation with the GRS. Hypothesis 4 was supported. Monumentalism was positively associated with the GRS. Hypothesis 5 was supported. Though not hypothesized, there were consistent, positive correlations of the GRS with reward for application, GLOBE institution collectivism, in-group collectivism, and future orientation, and negative correlations of the GRS with long-term orientation and harmony.

Aggregated personality. The GRS was positively correlated with agreeableness, conscientiousness, and openness and negatively correlated with neuroticism, while its association with extroversion was nonsignificant but in the expected direction. Hypothesis 6 was largely supported. Finally, the GRS was positively related to social desirability, which provided support for Hypothesis 7.

Discussion

We examined the integration of ARS, ERS, and MRS from eight multicountry surveys and the associations of response styles with country-level characteristics in correlational analyses. The study demonstrated the existence and multilevel equivalence of the GRS, a combination of ERS, ARS, and MRS. Our findings suggest that it is meaningful to aggregate response styles in a GRS, in line with Cronbach's (1950) original definition, to a systematic tendency to use certain categories of the answering scale (in our conceptualization to amplify or to moderate expression).

Moreover, we found that the GRS is systematically associated with country characteristics; it is particularly salient in countries with a lower socioeconomic development, fewer atheists, and more religious people. The consistent correlations of the GRS with values and personality at the country level suggest that response styles are part of national culture. People from cultures that value "fitting in" and ambiguity reduction more tend to use more GRS (i.e. more ERS and less MRS). Response styles can be viewed as communication filters that people use to express themselves. This communication filter is influenced by cultural characteristics. We tentatively summarize our findings by concluding that the GRS is positively associated with psychological variables that together make up two meaningful clusters: (1) "*fitting in*," as evidenced in the significant correlations with collectivism, embeddedness, traditionalism, agreeableness, and social desirability (e.g. Smith, 2004) and (2) *avoiding ambiguity*, as evidenced in significant correlations with percentages of religious people in a country, short-term orientation, reward for application, monumentalism, extroversion, and conscientiousness.

In addition to the GRS, we examined the associations of ARS, ERS, and MRS with country-level characteristics. ERS consistently showed the same patterning as the GRS, whereas MRS showed the

Table 2. Mean correlations of the response styles with country-level indicators.

Country-level indicator	GRS	ARS	ERS	MRS
Socioeconomic development				
HDI	−.50*	−.02	−.45*	.49*
Gini index	.53*	.31*	.48*	−.50*
Democratization	−.39*	−.17*	−.31*	.41*
Religious denomination				
Percentage atheists	−.42*	−.25*	−.37*	.40*
Percentage Christians	.22*	.27*	.17*	−.20*
Percentage Muslims	.21*	−.12*	.24*	−.14*
Hofstede values				
Power distance	.18*	−.02	.19*	−.20*
Individualism	−.29*	−.12	−.26*	.36*
Masculinity	.05	−.03	.08	−.02
Uncertainty avoidance	.14*	−.05	.18*	−.18*
Long-term orientation	−.42*	−.23*	−.41*	.36*
Schwartz values				
Harmony	−.23*	−.09*	−.26*	.20*
Embeddedness	.38*	.06	.37*	−.36*
Hierarchy	.24*	−.06	.25*	−.25*
Mastery	.14*	.08*	.15	−.17*
Affective autonomy	−.34*	−.10	−.33*	.31*
Intellectual autonomy	−.38*	−.14	−.36*	.34*
Egalitarianism	−.05	.17	−.09	.07
Social axioms				
Social cynicism	.00	−.25*	.00	−.05
Reward for application	.42*	.19*	.36*	−.40*
Social complexity	−.09	−.06	−.09	.13*
Fate control	.03	−.22*	.04	−.05
Religiosity	.27*	.18*	.29*	−.24*
Traditionalism versus secularism	−.59*	−.38*	−.55*	.55*
Monumentalism	.41*	.24*	.40*	−.34*
GLOBE-should be				
Power distance	−.01	.00	.02	.07
Uncertainty avoidance	.40*	.04	.38*	−.43*
Institution collectivism	.29*	.31*	.26*	−.33*
In-group collectivism	.27*	.16*	.31*	−.22*
Gender egalitarianism	−.05	.22*	.00	.07
Assertiveness	−.12	−.04	−.12	.07
Future orientation	.35*	.16*	.37*	−.34*
Performance orientation	.09	.38*	.12	−.10
Humane orientation	−.02	−.24*	−.01	.07
Big five personality				
Extroversion	.06	.17*	.09	−.03
Agreeableness	.33*	.22*	.30*	−.23*
Conscientiousness	.35*	.14*	.36*	−.26*
Neuroticism	−.18*	−.14*	−.15*	.12
Openness	.21*	.22*	.25*	−.10

(continued)

Table 2. (continued)

Country-level indicator	GRS	ARS	ERS	MRS
Eysenck personality				
Psychoticism	−.23*	.00	−.23*	.10
Extroversion	.25*	.34*	.24*	−.17*
Neuroticism	−.10	.00	−.11	−.06
Social desirability	.39*	−.16	.41*	−.35*

Note. ARS: acquiescent response style; ERS: extreme response style; MRS: midpoint response style; GRS: general response style.

*p < .05 (significance level as determined in 1000 bootstrap samples).

opposite patterning. We did not find all expected associations for ARS. We expected and confirmed a positive loading of ERS and negative loadings of ARS and MRS on the GRS at the individual level, but we found weak loadings and unstable positions of ARS at the country level. It could well be that ARS, compared with ERS and MRS, is more domain specific (e.g. De Beuckelaer et al., 2010). Furthermore, ARS may have a slightly different meaning at the individual and country levels, which calls for further research.

Study 2

In the second study, we extended the investigation of the nomological network to a multilevel framework, in which we examined the influence of characteristics at the individual level, the country level, and their interactions on response styles.

Individual level: Predictors of response styles

The most frequently examined background characteristics at the individual level with presumed relevance for response styles are age, gender, and education. Studies have shown that both ARS and ERS are more commonly used among elderly (e.g. Greenleaf, 1992; Ross and Mirowsky, 1984) and the less educated (Marin et al., 1992; Rammstedt et al., 2010), whereas MRS is more frequently used by the more educated (Sturgis et al., 2010). The correlates of ARS might be more difficult to evaluate in these studies, given the possible confounding with ERS due to their common operationalizations, as argued above. Effect sizes of gender differences are inconsistent and small (Van Vaerenbergh and Thomas, 2012). We used independent assessment of the response style indexes in examining the associations.

It may seem obvious to conclude that the GRS is positively related to age and negatively related to education. However, it should be noted that most studies were carried out in affluent countries. Interestingly, a study by Meisenberg and Williams (2008), employing secondary data from the WVS that involved a larger diversity of countries, found that the effects of age and education on response styles were not consistent across world regions. They reported a negative correlation of age and ERS in Africa and a positive correlation of education and ARS and ERS in South Asia. The findings cast doubt on the universality of the effects of age and education on response styles and suggest that country-level variables (i.e. socioeconomic development) could moderate the influence of response styles at the individual level. Therefore, we explored the cross-level interaction.

Country-level predictors of individual-level response styles

Using the findings of the first study, we selected predictors among the country-level variables as most promising for a multilevel approach. We examined four predictors at the country level: HDI, percentage of atheists, agreeableness, and monumentalism. These four predictors were chosen, because all of them had significant correlations with the four country-level response style indexes, and each of them represented a cluster identified in the first study: socioeconomic development, religious denomination, fitting in, and avoiding ambiguity.

Method

Data sources and measures. The same data sets from study 1 were used in the second study. The sample sizes at each level for this study are shown in Table 1.

The following three individual-level characteristics were examined in the multilevel analysis: age, education, and gender. Although the gender effect was less clear, we included this variable to explore its possible patterning across surveys. Age was recorded in years, education was measured by the highest degree achieved, and gender was dummy coded with 1 as male and 0 as female in all the eight data sets. The country-level predictors including HDI, percentage of atheists, agreeableness, and monumentalism were the same as in study 1.

Analysis. We conducted multilevel analyses with HLM version 6 (Raudenbush and Bryk, 2002). Individual scores of the GRS, ARS, ERS, and MRS in each survey served as the dependent variables. The intraclass correlation coefficients for the GRS ranged from 3% (WVS) to 11% (ISSP2004), for ARS from 5% (ISSP2005) to 15% (ISSP2003), for ERS from 7% (ISSP2006) to 16% (ISSP2008), and for MRS from 3% (ISSP2007) to 14% (WVS), suggesting that the threshold value of 5% proposed as the lower bound for conducting a multilevel analysis was reached in most cases (Van de Vijver and Poortinga, 2002). In accordance with Enders and Tofighi (2007), we centered all individual-level predictors around their respective country means and the country-level predictors around the grand mean. All multilevel analyses employed a random intercept and fixed slope. For individual- and country-level predictors, we entered one predictor per analysis; for the cross-level interactions, we entered one individual- and one country-level predictor together with their interaction effect.

Results

We report the findings with respect to individual-, country-, and cross-level coefficients in the following section. A summary of the mean coefficients for each predictor and the cross-level interactions among the eight surveys is presented in Table 3. The significance level of parameters was established in a bootstrapping procedure.

Individual-level predictors. Age had a consistent, positive association with the GRS. Education had a consistent, negative effect on the GRS. The effect of gender on the GRS was nonsignificant.

Country-level predictor. HDI had a negative effect on the GRS. The percentage of atheists also had a negative effect on the GRS, whereas agreeableness and monumentalism showed positive effects. The predictions of country-level characteristics on individual-level response styles corresponded to the findings in the first study.

Table 3. Mean regression coefficients of predictors in multilevel analyses.

Predictor	GRS	ARS	ERS	MRS
Age	.0055*	−.0001	.0005	−.0009*
Education	−.0404*	.0001	−.0039	.0058*
Gender	−.0365	.0099*	.0013	.0027
HDI	−1.7207*	.0008	−.3605*	.2386*
Percentage of atheists	−.0068*	−.0006*	−.0011	.0010*
Agreeableness	.0255*	.0054*	.0080*	−.0039*
Monumentalism	.0016*	.0002*	.0004*	−.0002*
Age × HDI	.0097	.0019	.0010	−.0017*
Education × HDI	−.0400	−.0079	−.0188	.0038
Gender × HDI	.0024	.0335	−.0391	−.0329

ARS: acquiescent response style; ERS: extreme response style; MRS: midpoint response style; GRS: general response style; HDI: human development index.

Note. Gender was coded as female as 0 and male as 1.

*p < .05 (significance level as determined in 1000 bootstrap samples).

Cross-level interaction. Most interactions among individual-level predictors with country-level predictors were nonsignificant. We compared the correlations of the four response styles with age, education, and gender of low-, medium-, and high-HDI countries in each survey and did not find systematic differences in correlations. It can be concluded that the cross-level interactions were not salient.

Discussion

We studied the effects of both individual- and country-level predictors and their cross-level interactions on response styles in multilevel analyses. We found that age had a positive effect and education a negative effect on the GRS. The effect of gender was less clear. The mixed results are perhaps due to the characteristics of the items that we used to construct the indexes (e.g. different topics such as values, religion, work, and leisure; different levels of interitem correlation, which may confound the indexes and the substantive content measured in the items). Country-level HDI and the percentage of atheists showed negative effects, and agreeableness and monumentalism showed positive effects on the individual-level GRS, supporting the substantive meaning and the cross-level equivalence of the meaning. The lack of significance in cross-level interactions points to the relatively stable effect of HDI (and other country-level characteristics) on the relationship of age, education, and gender with the GRS at the individual level, even though we cannot rule out the possibility that there is an insufficient number of low-HDI countries to test the interaction.

General discussion

We set out to explore the patterning of a GRS extracted from ARS, ERS, and MRS at the individual and country level. We confirmed that ARS, ERS, and MRS are interrelated response styles at both levels. The high level of multilevel equivalence suggests that the GRS has the same meaning at the individual and country levels. We found clusters of predictors of response styles at both levels, which points to the tendency to amplify or moderate responses. At the country level, response style in general had the strongest association with (1) fitting in: low socioeconomic development, low percentage of

atheists, collectivism, embeddedness, traditionalism, and agreeableness and (2) free from ambiguity: monumentalism, short-term orientation, reward for application, extroversion, and conscientiousness. At the individual level, the response style factor was associated with age and education.

Interpretation of response styles

There has been much discussion on the interpretations of response styles: Are they measurement errors or do they have a more substantive meaning? The relationships at the individual and country levels suggest a meaningful patterning of response styles, probably related to communication styles which may have a deeper root in the sociohistorical background of countries (Minkov, 2009). In our view, the dichotomy between measurement errors and substantive meaning is counterproductive. It is more adequate to see response styles as communication filters that impact all self-reports. The filter mainly works as the tendency to use specific parts of the response scales, either the middle or the extremes. The communication filter is related to impression management related to aspects of "fitting in" and avoidance of ambiguity.

ARS is currently being measured in different ways in the literature. The common operationalization of ARS (i.e. using the endorsement of *agree* and *strongly agree* options) in most previous studies applied (e.g. Smith, 2004; Meisenberg and Williams, 2008) can create a spurious correlation with ERS. In this case, the interpretation of ARS is straightforward (as similar to ERS). However, if ARS is only defined as agreement (using the endorsement of *agree* only, as in the present study), its meaning is not very clear. Our study suggests that ARS does not add much to the interpretation of the GRS. ERS and MRS are more defining characteristics.

Implication for cross-cultural management research and practice

Accurate measurement is essential in advancing the field of cross-cultural management to deal with the challenge of response styles in cross-cultural settings (Donaldson and Grant-Vallone, 2002; Fischer, 2009). Our study on the integration and the psychological meaning of response styles shows that response styles are embedded in the values and personality of respondents and their cultures, therefore response styles cannot be easily "turned off". Instead, response styles can provide additional substantive information about individual and cross-cultural differences. For example, data of employees' personality traits collected from self-reports can be reanalyzed at the individual level (i.e. constructions of response style indexes) to determine how they prefer to communicate. Aggregated response styles at a higher level would indicate the culture of an organization or society in large. In practice, methods such as score standardization to control for the effects of response styles in self-reports across cultures may not work adequately. Especially when the construct of interest is related to the clusters identified (i.e. fitting in, free from ambiguity, etc), response styles can be considered a concomitant construct related to the target construct, and score standardizations will erroneously remove variance in the target construct and influence the size of genuine cross-cultural differences (Fischer, 2004).

Limitations and future directions

Despite the strengths and value of the current research, a few limitations and caveats should be mentioned. The post hoc construction of response style indexes may not be able to reflect the response styles precisely. We used data from a range of topics across surveys, and their associations with external variables converged, which to some extent ensured the validity of these indexes. Nevertheless, we are not sure that the substantive meaning measured in the construct and styles

could always be adequately disentangled, notably in thematic surveys that scales tend to cover related domains. Moreover, not only are response styles associated with individual and cultural characteristics, but the domain of questions being asked may also affect response style use (van Dijk et al., 2009), which was not considered in the present study. Future research may either develop direct measures of response styles or locate additional evidence to validate the indirect measures. With more reliable and valid measures, future efforts should study the domain dependency of response styles at both individual and culture levels. To better utilize the GRS, a comparison of the effects of the GRS and other methods to control for response styles (i.e. anchoring vignettes) is also encouraged. In conclusion, the present research has tried to shed new light on the old, yet unresolved issue of the meaning and patterning of response styles. It is remarkable that after studying these styles for more than six decades the interpretation of response styles still looms large. We believe that progress in this field is contingent on attempts to better understand the mechanisms behind these styles and that cross-cultural research is important as it can provide variation in these styles, which are beyond the horizon of monocultural research.

Appendix

Item codes for items used to construct acquiescence (ARS), extremity (ERS), and midpoint responding (MRS) in each survey

EVS (European Value Survey)
ARS: V92 V94 V96 V135 V153 V155 V157 V159 V161 V163 V165 V274 V276 V283
ERS: V205 V206 V207 V208 V209 V210 V211 V212 V213 V214 V215 V216 V217 V218 V219 V220 V221 V222 V225 V226 V227 V228 V276 V277 V278 V279 V280
MRS: V93 V95 V134 V152 V154 V156 V158 V160 V162 V164 V166 V275 V282
ISSP2003 (International Social Survey Programme 2003)
ARS: V50 V51 V52 V53 V54
ERS: V11 V12 V13 V14 V15 V16 V17 V18 V26 V27 V28 V29 V30 V31 V32 V33 V34 V35 V67 V69
MRS: V19 V20 V21 V22 V23 V24 V25 V36 V37 V38 V39 V40 V41 V42 V43 V44 V45 V46 V47 V48 V59 V60 V61 V62
ISSP2004 (International Social Survey Programme 2004)
ARS: V36 V37 V38 V39 V43 V44 V52 V53 V54
ERS: V4 V6 V8 V10 V12 V30 V32 V34
MRS: V5 V7 V9 V11 V13 V31 V33 V35
ISSP2005 (International Social Survey Programme 2005)
ARS: V9 V10 V22 V23 V24 V25 V32 V33 V34 V35 V36 V52 V53 V54 V59 V60 V61 V62
ERS: V11 V13 V15 V17 V37 V39 V44 V49 V55
MRS: V12 V14 V16 V18 V38 V40 V45 V50 V56
ISSP2006 (International Social Survey Programme 2006)
ARS: V45 V46 V47 V48 V49 V50 V54 V55
ERS: V11 V13 V15 V17 V19 V21 V23 V35 V37 V39 V44 V52 V58 V61
MRS: V12 V14 V16 V18 V20 V22 V24 V36 V38 V40 V51 V53 V60 V62
ISSP2007 (International Social Survey Programme 2007)
ARS: V47 V48 V49 V50 V51

ERS: V6 V8 V10 V12 V14 V16 V18 V20 V26 V28 V65
MRS: V7 V9 V11 V13 V15 V17 V19 V25 V27 V29
ISSP2008 (International Social Survey Programme 2008)
ARS: V20 V21 V22 V23 V24 V25 V42 V43 V44
ERS: V6 V7 V8 V9 V10 V11 V29 V30 V31 V32 V35 V36 V37 V38 V39 V40 V41
MRS: V14 V15 V16 V17 V18 V26 V42 V43 V44 V45 V46 V47
WVS (World Value Survey)
ARS: V50 V52 V54 V195 V197
ERS: V60 V61 V62 V63 V108 V109 V110 V111 V112 V113 V125 V126 V127 V128
    V129 V130
MRS: V51 V53 V194 V196

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