Response Strategies and Response Styles in Cross-Cultural Surveys

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Abstract

This paper addresses the following research questions: Do respondents participating in cross-cultural surveys differ regarding their response style and response strategy when responding to attitude statements? If so, are these characteristics of the response process associated with their ethnicity and generation of immigration? To answer these questions we conducted a mixed method study. Quantitative analysis of a large representative sample of minorities in the Netherlands shows that cross-cultural differences in responding can partly be explained by a differential response style. These differences in response style turn out to be related to the generation of immigration, both in the representative sample and in a purposively selected qualitative sample of persons of the same four cultural groups. Analysis of cognitive interviews with the latter shows that respondents use three types of response strategies to overcome difficulties of responding to items in a cross-cultural survey. Response strategies turns out to be related to a respondent's generation of immigration.

Keywords: cross-cultural surveys, measurement equivalence, response style, response process, mixed methods research

Response Strategies and Response Styles in Cross-Cultural Surveys

In the last decades of the 20th century, many Western societies have transformed into multicultural societies as the result of a steady immigration flow. Ethnic minorities consist of a quarter of the US population and the prognosis is that by 2050 ethnic minorities will form the majority. In Europe, immigrants consist of 14% of the population on average (Pan and Pfeil, 2003) and 85% of the total Europe's total population growth results from immigration in 2005 (Munz, Straubhaar, Vadean, and Vadean, 2006). As these societies become more multi-cultural in nature, social scientists have become increasingly interested in the differences and similarities in values, attitudes and opinions that may exist between different groups of immigrants and between immigrant and natives.

To investigate these issues, surveys are usually the instrument of choice to gather attitudinal information on diverse populations. Obviously, when surveys are applied in a cross-cultural design, the issue of the cross-cultural comparability of survey findings becomes increasingly important (Van de Vijver & Leung, 1997). Some survey research only marginally pays attention to – or even completely ignores – that people may respond differently in surveys because they come from diverse cultural backgrounds. Overlooking this issue may lead to erroneous conclusions about group differences among culturally diverse populations. Fortunately, cross-cultural researchers more and more test the comparability of survey measurements empirically (Vandenberg & Lance, 2000). However, in order to adequately study the comparability of survey measurements, it is not sufficient to only establish whether a particular survey measurement constitutes an equivalent or inequivalent measurement across different cultural groups: Once measurements are found to be inequivalent, the causes for this should also be further investigated, so that cross-cultural survey measurements can be improved. Causes for inequivalence of measurements can be manifold, but in this paper we focus on one particular issue which has

not been systematically investigated in previous research; that is, the response strategy and response style that respondents may use within the framework of a cross-cultural survey. This is done against the backdrop of findings from a quantitative study on the assessment of measurement equivalence and the detection of response style for a large-scale cross-cultural survey. Specifically, this paper sets out to answer the following research question: Do respondents participating in cross-cultural surveys differ in terms of their response style and response strategy when responding to attitude statements, and if so are these characteristics affecting the response process associated with a respondent's ethnicity and generation of immigration?

Since the 80s, survey researchers approach the survey response as the outcome of cognitive, communicative and social processes (Belson, 1986; Bradburn, Rips, and Shevell, 1987; Hippler and Schwarz, 1987; Schwarz and Sudman, 1996; Tourangeau, 1987; Tourangeau and Smith, 1996). Each respondent is assumed to go through five stages: Interpreting the question, retrieving information, generating the judgment, mapping the judgment to the response scale and editing the response. Although theoretical models on the response process occasionally discuss how culturally diverse respondents may differ in this response process (Hui & Triandis, 1989; Tourangeau, Rips, & Rasinski, 2000, pp. 210-213), they mainly focus on individual differences in responding. Whether immigrants, who come from different cultures and who belong to different generations of immigrants, use different response strategies in surveys has not been systematically studied before. Nonetheless, given the vast amount of cross-cultural differences in measurement errors and response styles (for an overview, see Groves et al., 2004; Sudman & Bradburn, 1974; Van de Vijver & Tanzer, 1997), it is likely that such response strategies play a key role in the response process. For example, second-generation immigrants may have a higher educational attainment and language proficiency than the first-generation immigrants, and such differences between

generations may relate to the response strategies that these respondents use when answering to survey questions. To explore such issues we have conducted a mixed method study, of which we report the design and findings in the remainder of this contribution.

An Integrated Mixed Methods Study

General Approach

A mixed method design allows us to integrate the strengths of statistical modeling and cognitive interviewing. We start with estimating a latent variable model on data from a large representative sample of the four largest minorities in the Netherlands to detect the magnitude of group differences in responding (Study 1). Then, we conduct cognitive interviews in a small purposive sample of interviewees from the same four cultural groups to study the response process in more detail (Study 2). We integrate both data sets by inferring the response style of interviewees in the purposive sample from the statistical model, and comparing the interviewees' explanations for their response behavior in the cognitive interview accordingly.

In the quantitative study, we use a Latent Class Factor Model (Magidson and Vermunt, 2001) – of which the details will be discussed in the next section – to assess whether minorities respond differently to a selection of survey-items from the large-scale survey given their attitudes and whether these response differences can be attributed to a differential response style (Kankaras and Moors, 2009; Moors and Wennekers, 2003; Morren, Gelissen, & Vermunt, forthcoming). In the second stage of the study, in cognitive interviews we present the same items that are analyzed in the statistical model to a purposively selected sample of members of these cultural minorities in similar fashion as a regular survey interview.[1] We probed the interviewees retrospectively about a selection of questions which were shown to elicit inequivalent answers across minorities based on the findings from the quantitative study. We also probed the questions to which the interviewees showed

interpretational or other problems when they were presented to them for the first time during the interview. The interviewees' justifications of their answers are analyzed qualitatively and related to the cross-cultural differences found in the quantitative study.

Data collection. In this study, we compare the answers to the SPVA[2] survey collected in 2002 among the four largest minorities in the Netherlands[3], namely Turkish, Moroccan, Surinamese and Antillean people. We subjected 15 attitude statements on a Likert scale, each having five ordered response categories that range from *totally agree* to *totally disagree* to statistical analysis. These items operationally define three attitudes, namely the attitude towards the Netherlands, the endorsement of traditional family values, and the autonomy of children within the family. Given the substantive nature of these constructs, the minorities are expected to be subject to culturally specific sources of measurement error and possibly derive their answers to these attitude statements from systematically differing response processes. Table 1 reports descriptive statistics of all items included in the analyses for the four cultural groups:

[Insert Table 1 about here]

In addition, we held cognitive interviews from December 2009 until October 2010 among 24 interviewees who were recruited via unrelated contact persons, organizations, and personal contacts to avoid overlap in social background. We aimed for a heterogeneous sample as previous studies showed that the style of responding was systematically related to multiple socio-economic characteristics. We interviewed 7 ethnic Moroccan, 7 ethnic Turkish, 5 ethnic Antillean, and 5 ethnic Surinamese interviewees. Among them, 12 belong to the second generation of immigrants, 13 are highly educated, 10 are female, and 8 are older than 40 and 4 are younger than 26. The interviews were conducted at the interviewee's

home (14), at Tilburg University (5), at a public place (3) or at the workplace (2). The interviews lasted 45 minutes on average. During 8 interviews a research assistant was present who also helped with transcribing and coding. Five interviews were excluded from further analyses because 2 were used as a pilot, 2 were conducted among family of an interviewee, and 1 was conducted in another language using a translator. In general, some of the lower educated interviewees[4] displayed difficulties in understanding the purpose of the cognitive interviews. Presumably, a straightforward think-aloud interview would have been more suitable but we persisted with the two-phase interview to maintain comparability with the other interviews.

Study 1: Measurement Inequivalence and Response Style

Latent Variable Approach

Within the Latent Variable Modeling framework, attitudes are defined as complex theoretical constructs for which multiple empirical indicators that reflect important aspects of the attitude are needed to obtain a valid and reliable measurement of the construct (Bollen, 2002; Skondral and Rabe-Hesketh, 2004). In this approach, an attitude is modeled as a latent – unobserved – variable (also called factor or trait) for which survey questions (hereafter called items) are used as the indicators or observed variables. One important assumption in cross-cultural research is measurement equivalence (or measurement invariance): Each respondent with a certain attitude level will respond similarly to the items irrespective of his or her group membership (Meredith, 1993). Note that measurement equivalence allows for group differences in attitudes but not for group differences in the indicators conditional on the attitudes. There is evidence for measurement inequivalence when particular model parameters significantly differ across groups (Vandenberg and Lance, 2000).

[Insert Figure 1 about here]

Figure 1 depicts a latent variable based measurement model in which there is inequivalence with respect to the first item. As can be seen, latent variable F is related to items Y1 to Y5. The group variable G is related to F indicating a group difference in the attitude, but also directly related to the first item indicating group differences in the intercepts. Finally, G also moderates the association between F and the first item indicating group differences in the factor loadings. Note that usually measurement inequivalence occurs across several items simultaneously. The models that we test in this paper are more complex than the model depicted in Figure 1. They contain three related attitudes (three latent factors) measured by five items each (see Appendix). The unrestricted models allow for group differences in both the intercepts and the factor loadings in each of the fifteen items. The effect of attitudes on item responses is distinguished from the effect of a response style factor (RPS) by estimating models in which only each of the three item subset is affected by one attitude and in which all items are affected by a latent response style factor (Billiet and McClendon, 2000; Cheung and Rensvold, 2000; Moors, 2003; Morren, Gelissen, and Vermunt, in press).

To test for cross-cultural differences in responding, we compare unrestricted models – that allow for all possible group differences – with models assuming model certain parameters to be equivalent across minorities. Table 2 reports the log-likelihood and BIC values for the most relevant models. The BIC values can be used to compare models with one another: The lower the BIC value the better the model is in terms of fit and parsimony. Note that the models without and with the RPS factor are nested.[5]

[Insert Table 2 about here]

The BIC values in Table 2 show that there is evidence that ethnic minorities interpret the items differently after controlling for attitude differences. As indicated by the fact that Model A has a lower BIC value than Models B and C, these differences are visible both the item intercepts and the factor loadings. Moreover, inclusion of the style factor improves the model fit considerably; the models with a style factor have always a lower BIC value than their counterparts without a style factor. We also find that the style factor accounts for the group differences in the factor loadings; that is, after controlling for the RPS factor, the model with equal factor loadings (Model B_{RPS}) is preferred over the model with unequal factor loading (Model A_{RPS}). In summary, we find that there is measurement inequivalence between Dutch ethnic minorities and that inequivalence can partly be attributed to the response style factor.

For the purpose of the current study, we are mainly interested in the findings pertaining to the response style factor. Morren, Gelissen, and Vermunt (in press) provide more details on how to interpret this response style factor. To avoid making too strong assumptions about the distribution of respondents along the underlying RPS dimension and to simplify its interpretation, we defined the RPS factor to be a discrete latent variable with three ordered categories[6] (Magidson and Vermunt, 2001; Vermunt and Magidson, 2005). Based on a post-hoc interpretation of the parameters, it can be concluded that the first category (latent class) captures the tendency to prefer extreme categories (i.e. *totally agree* and *totally disagree*), whereas the third category captures the tendency to avoid extreme categories and select the adjacent categories (i.e. *agree* and *disagree*), given the attitudes. In other words, respondents who prefer extreme categories have an Extreme Response Style (ERS) and are likely to belong to the first category, whereas respondents who prefer adjacent categories have an Avoidant Response Style (AvRS) and are likely to belong to the third

category. Respondents with no particular response style are likely to belong to the second

category that measures a position in between the other two latent categories.

      Effects of covariates. Cross-cultural differences in the preference for extreme

response categories have been related to language use (Bachman and O'Malley, 1984;

Gibbons, Zellner, and Rudek, 1999), a collectivist-individualist values dimension (Harzing,

2006; Johnson, Kulesa, Cho, and Shavitt, 2005) and acculturation (Hemert, Baerveldt, and

Vermande, 2001; Marin, Gamba, and Marin, 1992). In this paper, we focus on acculturation

which is often overlooked but nevertheless an important topic in cross-cultural measurement:

The acculturation process –the settlement of immigrants into the receiving society– may

influence the way in which people interpret survey questions thereby leading to measurement

inequivalence (Van de Vijver and Phalet, 2004). Cultural minorities may either

accommodate to the values of the culture corresponding to the language in which the survey

is conducted (Harzing and Maznevski, 2002; Oyserman, Sakamoto, and Lauffer, 1998;

Ralston, Cunniff, and Gustafson, 1995), or affirm their ethnic background (Bond and Yang,

1982; Marin, Triandis, Betancourt, and Kashima, 1983). To statistically investigate whether

acculturation and ethnicity are related to ERS and AvRS, we included 'generation of

immigration and 'ethnicity' as covariates in our model.[7] Similar to the group variable G in

Figure 1, these covariates are assumed to affect the response style measured by the latent

variable RPS. The results are presented in Table 3.

[Insert Table 3 about here]

      Table 3 shows the model parameters related to each category of RPS[8] in Model B_{RPS}

with and without the covariate 'generation of immigration'. In both models, we hold constant

for differences in ethnic background. The parameters are logit coefficients subject to effect

coding, which implies that they sum to 0 across latent classes and covariate categories. A negative (positive) value indicates that a certain combination is less (more) likely to occur than average. According to Model B$_{RPS}$ Surinamese respondents are more likely to use AvRS and Antilleans less likely. Turkish respondents are less likely to belong to the category 'no response style', whereas Surinamese and Antillean people are more likely to belong to this category. Finally, Turkish people are more likely to use ERS as a response style, whereas Surinamese people are less likely to use ERS while responding to attitude statements. Controlling for generation of immigration (Model 2) does not alter these group differences in responding. Holding constant for differences in ethnic background, respondents belonging to the second generation[9] are more likely to use no response style. In summary, these findings indicate that both ethnicity and generation of immigration are related to the (non)usage of a response style.

      Classification. Based on the model estimates resulting from the quantitative analysis (Study 1), we assign a response style to the interviewees in the qualitative study (Study 2). We have two reasons to classify the interviewees based on the model estimates of the most parsimonious model C$_{RPS}$. First, as the number of parameters increases, the classification of the respondents becomes more uncertain. Second, great uncertainty exists about the nature of the purposive sample in the qualitative study, which is why a relatively simple and parsimonious model may be more appropriate.

[Insert Table 4 about here]

      In Table 4, the interviewees are classified according to their response style and the generation of immigration. A few interviewees of the first generation (2 out of 8) and the majority interviewees of the second generation (9 out of 11) do not endorse a response style.

Note that the quantitative analyses point in a similar direction (see the generational effect on the response style in Table 3).

Study 2: Investigating Response Strategies in the Response Process

Cognitive Interviews

For Study 2, the recordings of the cognitive interviews were transcribed by the first investigator and a trained research assistant. To analyze the qualitative data from the interviews, a code list was developed which used the theory on survey response as a general thematic framework. This analysis revealed an important pattern in the data: Interviewees express different aspects of an attitude when responding to the survey questions. First, to justify their answers some interviewees predominantly refer to their personal experiences or refer to abstract notions that apply to many people or situations. We refer to arguments as personal when the interviewee (a) relates his or her opinions to personal experiences, (b) emphasizes that something is only valid to him or herself, or (c) actually discusses personal behavior. An argument is regarded as general – or abstract – when the interviewee (a) talks in general terms, (b) perceives his or her own life in a distant manner or (c) is open to other opinions. Second, in giving personal arguments interviewees differ in the degree to which they relate explicitly to personal behavior: Some repeatedly interpret the questions as a behavioral inquiry while others refrain from revealing any information about personal behavior. Third, we distinguish two ways in which interviewees bring their arguments to the table. An interviewee with a convincing argumentation style seeks to persuade the interviewer of his or her norms and values, arguing in a firm manner without considering the relative value of the statements. Contrastingly, an interviewee endorsing a contemplative argumentation style argues thoughtfully, weighs arguments for and against, and carefully chooses words. Although most interviewees alternately employ both argumentation styles –

depending on the type of question – throughout the interview, some interviewees use one style predominantly. Note that each argument is coded separately.

These individual differences in the argumentation allowed us to further distinguish three separate response strategies that differ with respect to general or personal arguments, behavioral information, and a convincing or contemplative argumentation style. Although many combinations are possible, we found that some occur more often others. In particular, we argue that interviewees who systematically exclude personal information in justifying their attitudes follow an attitude-detached response strategy, interviewees who repeatedly answer to questions using behavioral statements follow a behavioral response strategy, and interviewees who alternately use general and personal arguments follow an attitude-balanced response strategy. Note that these specific response strategies differ from response styles: A response style refers to the tendency to select or to avoid certain categories, irrespective of the item content whereas a response strategy refers to the type of arguments presented in justifying these responses.

[Insert Table 5 about here]

Table 5 illustrates the differences between the response strategies. We assign a response strategy to the interviewees in our sample based on the amount of words spent on these types of arguments and argumentation styles. Four interviewees have a behavioral response strategy, five interviewees have an attitude-detached response strategy, and nine interviewees have a balanced response strategy. Note that one interviewee could not be classified as he scored high on presenting general arguments in a convincing style. The interviewees differ in the degree to which they use these response strategies systematically.

In the following, we describe the three response strategies and how they are related to the response style.

      Behavioral response strategy. Interviewees who consistently answer using information about their own behavior are characterized by a behavioral response strategy. They interpret the attitude questions as if the interviewer asks about their actual personal behavior in certain situations. After the interviewer has asked them to repeat the question in their own words, they say something like: "You want to know if my parents have something to say about whether I move out?" Thinking of personal experiences can have two effects on responding: If the personal experiences support their general opinions about a subject, interviewees are likely to give a clear (possibly more extreme) answer; however, if the personal experiences contradict their opinions, they are likely to give an ambiguous (possibly less extreme) answer (Tourangeau, Rips, and Rasinski, 2000, pp. 185). We find that interviewees who use personal experiences to support their attitudes often use a more convincing manner to present their arguments. An ethnic Turkish male (21) who scores high on behavioral response strategy, agrees to item 9: "I would always treat my parents very well, especially because of how they treated me until now, they raised me and uh, they made me a man". With respect to the same item, other interviewees integrate personal information while simultaneously regarding alternative situations in which their attitudes might apply. An ethnic Surinamese female (27) – also agreeing to item 9 – argues: "I can always count on them, they do everything for me […] If I wouldn't like their behavior or attitude, I would say something about it but that doesn't mean I would respect them any less". We illustrate these differences in presenting behavioral arguments in a convincing way in Figure 2.

[Insert Figure 2 about here]

In Figure 2 we plot interviewees along two dimensions measuring the words used in arguments that either treat behavior or are posed in a convincing manner. The words are given in percentages and in relation to the total number of words spend on justifying the answers retrospectively. For example two interviewees located in the lower left corner score low in both behavioral statements and a convincing argumentation style. The other two respondents with a behavioral response strategy are somewhat more to the middle but remain in the upper right corner of the figure. Note that the conclusions we made with respect to behavioral arguments also hold for the less specific personal statements.

Remarkably, interviewees employing a response style score either high or low in behavioral statements. Six out of ten interviewees using 5% or less of their words on behavioral statements and both interviewees in the upper right corner systematically select or avoid extreme categories. Thus, most interviewees who use a response style either systematically exclude behavioral statements or intentionally interpret the questions as behavioral questions. We suggest that excluding personal information makes it easier to systematically translate ideas about surveys, the question topics, and the question format into particular response categories. For example, one interviewee retrospectively argues: "I didn't think of a family situation at first, […] that is the difference I guess. So earlier I answered without considering my own family and when I think about it now, I come to a different conclusion". He changes his response from *agree* to *totally agree* after including his personal experiences. We also observe the opposite: Personal experiences that intensify attitude conflicts may lead to less extreme judgments. For instance, a single woman argues in agreeing to item 13: "To say 'totally agree' would imply that I do not approve of my own family situation".

Attitude-detached response strategy. Interviewees, who shun personal information by avoiding their ethnicity or personal experiences, use a detached response strategy. They

reveal only part of their attitudes through abstract, general reasoning. At some point, eight interviewees explicitly argue that they do not want to generalize their personal experiences, take their culture as abstract reference point, or give a general view on society. Two of them even declare in advance: "I will interpret the question generally, not personally". Interviewees who use an attitude-detached response strategy use vague arguments, for example: "That is the traditional image that everybody longs for eventually, I think, to be together but also to have children to live for". Some mention their own norms and values in a somewhat distant manner: "You should be there for your child, no matter what" or "That is the habit in our culture, yes, here in the Netherlands it is different". Some of these interviewees explain why they use general arguments: "My personal opinion does not mean that everyone should have the same opinion". To show the individual differences in the overlap between using general arguments and presenting them in a contemplative manner we plot the interviewees in Figure 3 with respect to which they use general arguments in a contemplative manner.

[Insert Figure 3 about here]

The top of Figure 3 depicts three interviewees who spend more than 70% of their words on making general arguments. The majority of the interviewees are plotted in the center of Figure 3 meaning that they use about 50% of their words on general arguments. Three interviewees using a detached response strategy are among these centered interviewees and the other two are located in the upper middle and upper right corner, the respondents using a behavioral response strategy are located in the lower left corner of Figure 3. .

Attitude-balanced response strategy. Interviewees with an attitude-balanced response strategy form an opinion by integrating thoughts and experiences across several

domains: Personal surroundings, the host country and their cultural background. First, we

suggest that interviewees with an attitude-balanced response strategy focus on specific

characteristics of the questions instead of responding similarly to all attitude questions. As

they integrate several sources of information dependent on the topic of question, they react

more balanced and are less likely to be subject to a response style than others. Only two out

of nine interviewees using this response strategy are subject to a response style. These

'balanced' interviewees seem to choose for either personal versus general reflections or a

convincing versus a contemplative argumentation style depending on the question content.

Response strategies, ethnicity and generation of immigration. After identifying

the different response strategies, we examine whether the interviewees' ethnicity and their

generation of immigration are systematically related to the response strategies that they use,

as these characteristics were also used in the quantitative analysis. The evidence from the

qualitative analysis suggests that particularly the generation of immigration is related to the

response strategy used by the interviewees. Specifically, we find that the interviewees who

are less acculturated than others predominantly use personal arguments or mainly present

arguments in a convincing way. Table 6 reports the percentage words used during the

interview in giving statements using the behavioral response strategy, averaged across the

interviewees of the first generation (10), and across the interviewees of the second generation

(9) of immigration.

[Insert Table 6 about here]

Table 6 indicates differences between the first and second generation interviewees in

three aspects. First, first generation' interviewees more often use a convincing argumentation

style than a contemplative argumentation style. In contrast, second generation' interviewees

use the contemplative and convincing argumentation style to similar degree. Second, interviewees belonging to the first generation rather use more personal than general arguments when answering questions about the attitude toward the Netherlands, whereas the interviewees belonging to the second generation answer personally to questions about family matters. Third, whereas interviewees belonging to the first generation use information related to both personal experience and the ethnic background when explaining their response, the second generation' interviewees avoid the ethnic background. This finding could indicate that the interviewees from the first generation more likely affirm their own ethnic background (Marin, et al., 1983), while interviewees of the second generation more likely accommodate their answers to the cultural majority (Ralston, et al., 1995). Table 6 also illustrates that the ethnic background is rarely referred to by the interviewees in a direct way which could also be related to the diffuse distinction between personal and cultural experiences (Smith, 1998). With respect to ethnicity, we find that the Moroccan interviewees of both first and second generation use an attitude-balanced response strategy. This finding is in accordance with Phalet and Schönpflug (2001) who attribute a more acculturated lifestyle to Moroccan than to Turkish respondents. Similarly, Stevens et al. (2004) find that the majority of Moroccan respondents score high on identification with the Dutch as well as the Moroccan culture. This acculturation style is referred to by Berry (1990) as integration: Those who feel close to the values of the host society as well as their ethnic background. Presumably, ethnicity mainly plays a role in the response process through the mode of acculturation that differs across minorities.

Conclusion and discussion

In this paper, we suggest that cross-cultural differences in responding are related to the extent to which respondents integrate their experiences of their personal, cultural and public life in the survey process. Similar to Krosnick (1991), we argue that respondents

employ response strategies to deal with the difficulty of answering to an attitude statement. Especially for minority respondents, an attitude statement presents several decisions to be made: Should they focus on their personal situation, their cultural background, or the norms and values of the majority? Ideally, respondents have beliefs, impressions and prior judgments in each situation; they attribute importance to these beliefs accordingly and base their judgment on a balanced summary of these 'weighted' beliefs. Cross-cultural differences in responding may result if the respondents avoid the complexity of making a balanced judgment by focusing primarily on their personal situation, their cultural background or the degree to which they relate with the host culture. If their answers depend on their personal situation or ethnic background, cultural specific traditions, habits, or topics that are considered taboo become more important. These differences in perception of the topics referred to by the questions can ultimately lead to measurement inequivalence.

We have shown statistically that part of the response differences across the minorities in the Netherlands can be accounted for by the response style and the generation of immigration. Next, we have related these quantitative results to a qualitative sample of interviewees belonging to the same minorities. We assigned a response style to these interviewees based on the model estimates obtained using the large sample. We have questioned these interviewees about their answers, and related their way of justifying their answers to their response styles and generation of immigration. Our findings suggest that interviewees who exclude personal information or purposively relate all questions to their own behavior are more likely to use a response style than the other interviewees. We find that all ethnic Moroccan interviewees use a balanced response strategy, and that the ethnic Moroccan respondents in the quantitative sample are less likely to use any response style than the other minorities. Finally, we find that interviewees of the first generation are more likely to justify their answers using their own personal experiences, and are more likely to present

these arguments in a convincing manner. Note that our cognitive interviews were based on a relatively small purposive sample of interviewees with a limited number of persons per ethnic group which makes the detection of patterns of response strategies more challenging.

We inferred three response strategies from our findings: The behavioral response strategy, the attitude-detached response strategy and the attitude-balanced response strategy. The great variation in the way in which respondents justify their answers illustrates that the understanding of the survey questions differ strongly across respondents. To improve especially cross-cultural survey designs, we suggest including a short introduction in which the researcher clarifies to the respondents whether the domain of interest is the host country, the cultural background, or the personal experiences. In this way, respondents who come from different cultural backgrounds may better understand what the researcher wishes to know. As a result, his or her responses may more validly reflect the construct that the researcher intends to measure and problems of measurement inequivalence may be reduced.

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Footnotes

[1] The respondent is asked to select one answer category that reflects his or her opinion best.

The interviewer does not provide further explanation.

[2] SPVA stands for Social Position and Utility Use of Ethnic Minorities. The survey maps the

cultural, economic and social life of ethnic minorities in the Netherlands (Dagevos, Gijsberts,

and Van Praag, 2003). We thank Data Archiving and Networked Services (DANS) for

providing the data files.

[3] Since the data is collected among households, we only include the answers given by the heads of the households to secure independent observations.

[4] Interviewees who only finished primary education, the lower level of high school, or the lower level of professional education.

[5] The former can be obtained from the latter either by fixing the model parameters for the RPS factor to 0 or by reducing the number of categories of the RPS factor to 1.

[6] The three latent classes can be regarded as three ordered categories because they are scored -1, 0 and 1.

[7]Admittedly, this is a rather coarse indicator for acculturation, but unfortunately more sophisticated measures of acculturation were not available in SPVA data set.

[8] The latent variables are operationalized by three ordinally related categories.

[9] The Netherlands Institute for Social Research (SCP) assigns people, who were born abroad to the first generation, whose parents (at least one) were born abroad or who immigrated before the year of 6 to the second generation.

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Table 1.

Mean observed item response per ethnic group (N=3549)

Factor and items		Turks	Moroccans	Surinamese	Antilleans
Factor 1: Attitude toward the Netherlands					
Item 1	In the Netherlands immigrants get many opportunities	2.48 (1.06)	2.58 (1.07)	2.74 (1.11)	2.75 (1.15)
Item 2	The Netherlands is hostile to immigrants [a]	3.20 (1.02)	3.53 (0.88)	3.60 (0.88)	3.48 (0.91)
Item 3	In the Netherlands your civil rights as an immigrant are respected	2.97 (0.97)	2.53 (0.91)	2.31 (0.89)	2.40 (0.91)
Item 4	The Netherlands is a hospitable country for immigrants	2.60 (0.90)	2.44 (0.85)	2.48 (0.86)	2.56 (0.84)
Item 5	The Netherlands is tolerant towards foreign cultures	2.17 (0.91)	2.43 (0.87)	2.16 (0.82)	2.31 (0.82)
Factor 2: Autonomy of the children					
Item 6	Children should live at home until marriage	2.30 (1.04)	2.24 (1.12)	3.07 (1.27)	3.41 (1.23)
Item 7	Elderly must be able to move in with their children	2.88 (1.13)	2.21 (0.96)	2.90 (1.15)	2.99 (1.17)
Item 8	Adult children should be able to move in with their parents	2.11 (0.88)	2.06 (0.85)	2.68 (1.08)	2.87 (1.11)
Item 9	Parents always have to be respected, even if they do not deserve it based on their behavior or attitude	1.89 (0.83)	1.80 (0.89)	2.39 (1.11)	2.30 (1.09)
Item 10	Older family members should have more influence in important decisions (for instance about moving) than younger ones	2.89 (1.15)	2.63 (1.12)	3.15 (1.12)	3.12 (1.09)
Factor 3: Family values					
Item 11	A man and woman are allowed to live together without being married	3.46 (1.25)	3.88 (1.11)	2.10 (1.04)	2.05 (1.04)
Item 12	Married people with children should not be allowed to divorce [a]	2.88 (1.19)	3.33 (1.14)	3.36 (1.09)	3.59 (1.05)
Item 13	The best family remains to be: Two married parents with children [a]	2.46 (1.09)	1.94 (0.93)	2.53 (1.22)	2.60 (1.21)
Item 14	A daughter aged 17 is allowed to live by herself	4.00 (0.93)	4.06 (0.95)	3.59 (1.04)	3.40 (1.14)
Item 15	The opinion of the parents has to be important in the choice of a partner for their child [a]	2.54 (1.04)	2.52 (1.09)	3.36 (1.11)	3.53 (1.07)
N (unweighted)		905	854	1014	776
Response Rate		52	52	44	51

Note. [a] The items 2, 12, 13 and 15 are formulated in reversed manner where a positive answer indicates a conservative attitude. For the other items a positive answer indicates a modern attitude (see Dagevos et al., 2003). The standard deviations are in parentheses. Totally agree is indicated by 1, agree by 2, neither agree nor disagree by 3, disagree by 4, totally disagree by 5.

Table 2.

Model selection estimated with SPVA data (N=3549)

Model	Fit Statistics		Number of parameters
	Log-Likelihood	BIC (based on LL)	
Without a correction			
A) Unrestricted model	-66075.41	134823.86	327
B) Equivalent factor loadings	-66345.42	134996.02	282
C) Equivalent intercepts	-67499.45	135832.70	102
Corrected for response style			
A_{RPS}) Unrestricted model	-61464.97	126134.32	392
B_{RPS}) Equivalent factor loadings	-61588.42	126013.36	347
C_{RPS}) Equivalent intercepts	-62594.19	126553.51	167

Table 3.

Effects (logit coefficients) of ethnicity and generation of immigration on the response style in Model C_{RPS}

Model	Covariates	Response style factor					
		AvRS		No response style		ERS	
B_{RPS}	Ethnicity						
	Turkish	0.02	(0.07)	–0.25**	(0.05)	0.23**	(0.07)
	Moroccan	–0.03	(0.08)	0.00	(0.05)	0.03	(0.10)
	Surinamese	0.21**	(0.06)	0.13*	(0.05)	–0.34**	(0.08)
	Antillean	–0.19*	(0.08)	–0.11*	(0.05)	0.08	(0.09)
B_{RPS} + immigration	Ethnicity						
	Turkish	0.03	(0.06)	–0.24**	(0.05)	0.21**	(0.07)
	Moroccan	–0.08	(0.07)	–0.01	(0.05)	0.09	(0.09)
	Surinamese	0.21**	(0.06)	0.13*	(0.05)	–0.33**	(0.08)
	Antillean	–0.16*	(0.08)	0.12*	(0.05)	0.04	(0.09)
	Generation of immigration						
	First	0.05	(0.04	-0.17**	(0.04)	0.12	(0.06)
	Second	–0.05	(0.04)	0.17**	(0.04)	–0.12	(0.06)

Note. Standard errors are shown between parentheses. According to the Log-Likelihood Ratio Test, including the variable generation of immigration improves the model fit of model B_{RPS} (ΔLL=7; Δdf =2, p = .029). * p < .05. ** p < .01.

Table 4.

Classification of Interviewees According to Estimates of the Latent Class Factor Model and the Generation of Immigration

	ERS	No response style	AvRS
Generation of immigration			
First	2	2	4
Second	1	9	1

Table 5.

Response Strategies and Use of Arguments and Argumentation Style

	Arguments			Argumentation Style	
	General	Personal	Behavioral	Convincing	Contemplative
Response Strategy					
Behavioral	Occasional	Frequent	Frequent	Frequent	Rare
Attitude-detached	Frequent	Rare	Rare	Occasional	Occasional
Attitude-balanced	Occasional	Occasional	Occasional	Occasional	Occasional

Note. The labels 'rare', 'occasional' and 'frequent' are assigned to the cells based on the percentages of words spent on these types of arguments. Occasional refers to diverging pattern of number of words used on these arguments across interviewees using this response strategy.

Table 6.

Amount of words used in justifying answers (percentages).

	Argumentation style		Arguments					
	All items		Items 1 to 5			Items 6 to 15		
	Convincing	Contemplative	Personal arguments	Behavior	Ethnic background	Personal arguments	Behavior	Ethnic background
Generation of immigration								
First	49	18	10	1	5	11	5	5
Second	33	35	5	0	2	17	5	0

Note. The percentages are obtained by dividing the words spent on these types of arguments by the total number of words spent on the retrospective justification of the answers.

Figure 1.

Measurement Inequivalence in a 1-Factor Model
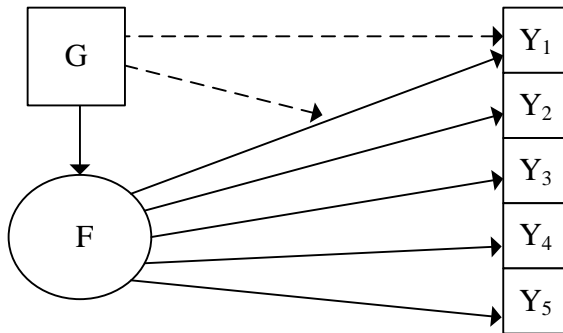
Note. Measurement inequivalence in a 1-factor model containing 5 items. The group variable G relates to the factor (indicating different group means), to the item directly (indicating different group intercepts), and to the item indirectly via the relationship with the factor (indicating different group factor laodings).
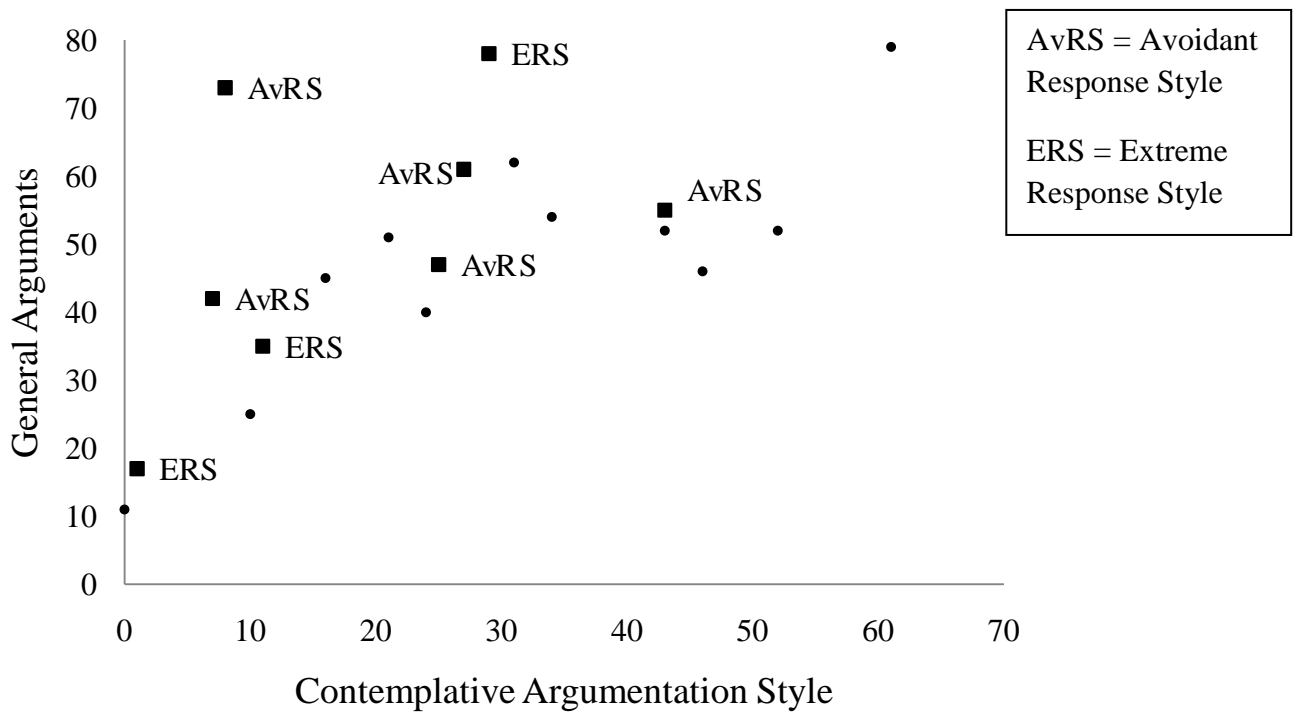
Figure 2.

The Use of Behavioral Statements and Convincing Argumentation Style
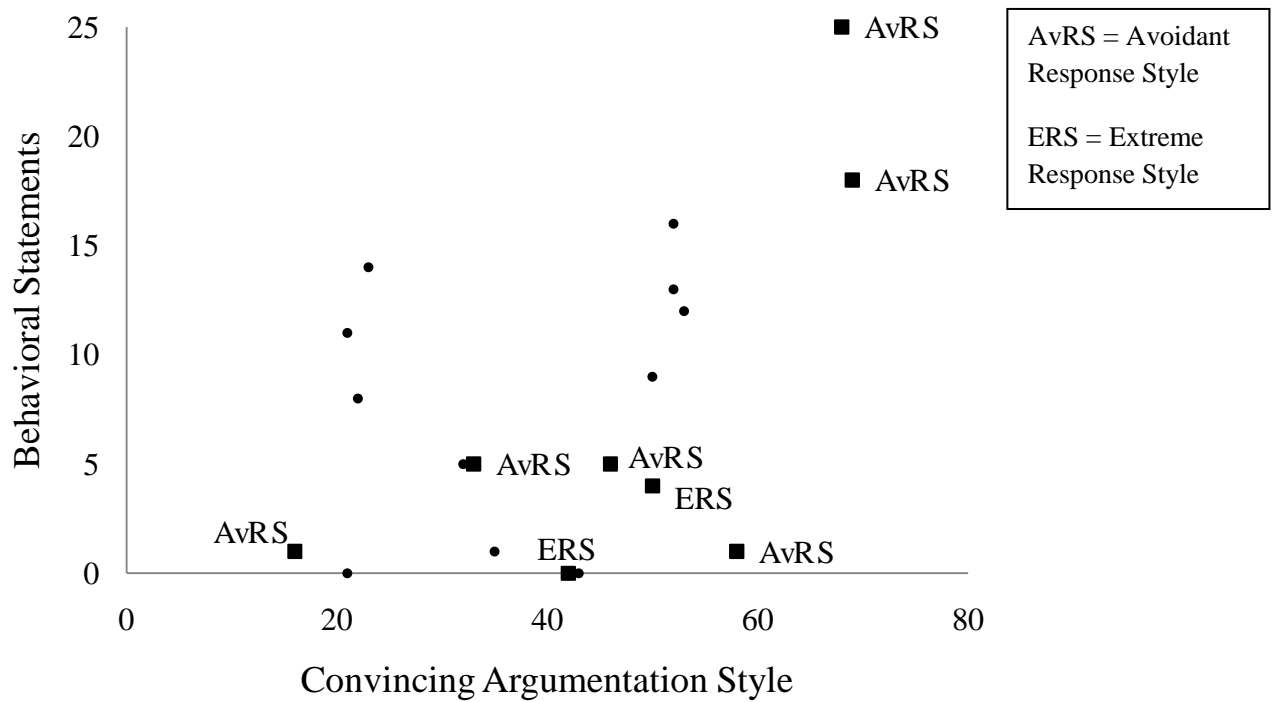
Note. The numbers on the axes represent the percentage of words spent on these arguments. Interviewees plotted on two dimensions related to the codes 'behavioral statements' and 'convincing argumentation style'. The response style of the interviewees is indicated by AvRS, ERS or not mentioned if no response style.

Figure 3.

The Use of General Arguments and Contemplative Argumentation Style

Note. Interviewees plotted on two dimensions related to the codes 'general arguments' and 'contemplative argumentation style'. The response style of the interviewees is indicated by AvRS, ERS or not mentioned if no response style. The numbers on the axes represent the percentage of words spent on these arguments.

Appendix

Here we provide more details about the Latent Class Factor Model with a response style we used in our analysis. This model was proposed by Moors (2003). Recently, Morren et al. (in press) extended this model by showing that it is better to treat the relationship between substantive factors and items differently from the relationship between response style factor and items. More specifically, in their relationship with the response style factor, the item responses are treated as nominal variables, yielding five category-specific parameters per item. This means that no assumptions are made about the form of these relationships. For the attitude factors, only one parameter is used per item because for this relationship the items are treated as ordinal variables. More specifically, we assume that

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This is a hybrid between a multinomial and an ordinal logit model. The β's are the item parameters to be estimated: β_{0jc} is an intercept term for item j and category c, β_{1j}, β_{2j} and β_{3j} are slope parameters corresponding to the three substantive factors, and β_{4jc} are the slope parameters for the response style factor denoted by RPS_i . The parameters β_{1j}, β_{2j}, and β_{3j} are multiplied by the category number c, which results from the ordinal specification for the relationships with the substantive factors. Note that some of these parameters are fixed to 0 because each item loads on only one substantive factor. The other model parameters are category specific.

The Latent Class Factor Model with a response style can be estimated with the Latent GOLD software, a general package for latent variable modeling (Vermunt & Magidson, 2008). This program also provides estimates for   , that is, the probability of having

a particular response style given the provided responses. This feature is used in our Study 2 in

which we determined the response style for each of the interviewees.