

Ratings and rankings: reconsidering the structure of values and their measurement

SETH OVADIA

(Received 24 July 2002; accepted 19 February 2003)

Despite extensive discussion and analysis over the past three decades, researchers are still divided over the preferability of rating or ranking systems for measuring values. However, the debate originates from the false premise that one method must be used to the exclusion of the other. A conceptualization of the value structure that uses characteristics of both rating and ranking systems opens up theory and research to a more complex understanding of values. Data from the 1995–1997 World Values Survey demonstrate how using both rating and ranking systems can lead to distinct and equally valid conclusions about the differences in value importance among the nations of the world. This suggests that either method by itself provides an incomplete understanding of the value structure. While the potential methodological complications of using both ratings and rankings must be explored, the additional cost would be a productive investment for moving beyond the rating–ranking impasse.

One way that research on values differs substantially from research on many other social science topics is the inexact definition of the object of analysis. While quantitative items such as wages and fertility are (largely) agreed upon in their definition and how they are to be measured, values do not have a single, unified definition nor a universal model of measurement. The choices that researchers make in defining what a value is not only determine the nature of the item of analysis (the value structure) but also the method of measurement (ratings or rankings). Therefore, a meta-analysis of values research must address two related questions. First, how are values structured in an individual's mind? Second, how does one measure a value?

Historically, values research and theory have focused on the measurement question much more extensively than—and perhaps even to the neglect of—the structure question. The debate over the nature of values has most often been engaged on methodological grounds, specifically whether values are best measured with ranking or rating systems. This debate remains unresolved 30 years after it first became prominent in social science research. While there have been intermittent contributions to the literature

Seth Ovadia is an Assistant Professor of Sociology in the Department of Sociology, Anthropology, and Criminal Justice, Towson University, 8000 York Road, Towson, MD 21252, USA. Tel.: +1 (410) 704 2852; fax.: +1 (410) 704 2854; e-mail: sovadia@towson.edu. His other recent publications on values have appeared in *Social Science Quarterly* ('Race, class and gender differences in high school seniors' values', Vol. 82) and *Sociological Perspectives* ('Suggestions of the postmodern self', Vol. 46). He is also active in research on urban racial inequality in the United States.

supporting one position or the other over the past decade (Schwartz 1992, Russell and Gray 1994, Maio *et al.* 1996, Johnson *et al.* 1999), the question of how to measure values is as open today as it was in the 1970s.

The first section of this paper reviews the rating–ranking debate and suggests that by considering the question from a theoretical rather than a methodological point of view, we can not only understand, but resolve, the differences between the two positions. The second part of the paper uses an experimental question from the 1995–1997 World Values Survey to provide an example of how rating and ranking formats can lead to different conclusions about values differences across groups, neither of which is necessarily any more correct than the other. These results demonstrate the need for a new approach to values research that incorporates the theoretical and methodological premises of both types of value measurement.

Measuring values: ratings and rankings

In one of the seminal works on values, Rokeach (1968: 124) defined a value as ‘a type of belief . . . about how one ought or ought not to behave, or about some end-state of existence worth or not worth attaining’. Since the 1970s, there has been an ongoing debate between proponents of the two predominant ways of measuring these desired end-states. In a ranking system, the respondent is asked to place a list of values in order of importance. This has been the method used by Rokeach in his Value Survey (1967), the European and World Values Surveys (Inglehart *et al.* 2000), and many other studies. The other method of measuring values is a rating system, in which values are rated by the respondent independently of one another, typically on a Likert scale or some variant thereof. This approach has been used in the General Social Survey (Davis and Smith 1996), modified versions of the Rokeach Values Survey (Moore 1975, Rankin and Grube 1980, Braithwaite and Law 1985), and the Schwartz Values Survey (Schwartz 1992).

The rating–ranking debate became prominent shortly after the development and popularization of the Rokeach Value Survey (RVS) in the late 1960s. The RVS uses a ranking system in which two lists of 18 values [representing terminal (ends-oriented) and instrumental (means-oriented) values] are arranged by the respondent in order of importance. Respondents are not allowed to indicate ties between any two values. The two hierarchies are then taken jointly to represent the value system of the individual. In some studies, these value system data have been associated with various other individual characteristics, such as religious beliefs (Rokeach 1973), social activism (Thomas 1986), and health behaviours (Kristiansen 1985). In other studies, comparisons across groups and societies have been made using the RVS (Moore 1976, Reynolds 1984, Mayton and Furnham 1994), but the cross-cultural application of the RVS has been criticized (Ng 1982).

Despite its widespread use, there have been critiques of the RVS that are relevant to most ranking systems. Even though Rokeach developed multiple methods for administering the survey in attempts to simplify the task for the

respondent, methodological difficulties often arise in administering a ranking tool. First, a ranking question cannot be easily asked over the telephone, which has become the main mode of survey research in the last three decades. Second, requiring a respondent to place 18 items in an order of preference is a lengthy process when compared to asking for individual ratings. Rokeach himself admitted that 'many respondents report the ranking task to be a very difficult one—one they have little confidence in having completed in reliable manner and one they are often sure they had completed more or less randomly' (1973: 28–29). Third, rankings result in a data set that cannot be analysed with standard statistical methods because of the interdependence of the ranks. If the rankings of 17 of the values in the RVS have been indicated by the respondent, the value of the final value is predetermined. This characteristic of the data (sometimes referred to as being 'ipsative') requires researchers to make complex adjustments in order to perform statistical analyses of the results (Jackson and Alwin 1980). In contrast, the rating system is advocated for its simplicity in execution and analysis, as the respondent can quickly and easily respond to each item without having to compare the value with others on the list. A number of researchers have also found that using a system in which each item is independently evaluated does not lead to a significantly different rank ordering of the items on the list (Feather 1973, Moore 1975, Rankin and Grube 1980, Alwin and Krosnick 1985).

However, rating systems have also been subject to considerable criticism. Researchers have found that rating tools allow low- and non-motivated respondents to give largely uniform responses ('non-differentiation') and thereby understate the differences among values (Rokeach 1973, Kohn 1977). Rating systems often yield ties between values, which may be the result of indifference to the question, rather than a true equivalence of importance. Because the ranking procedure forces the respondent to give each value a different assignment, it prevents non-differentiation, irrespective of motivation level. However, it is also possible that ranking procedures force individuals to overstate the differences between values (Maio *et al.* 1996), make comparisons of values that the respondent considers non-comparable (Braithwaite and Law 1985), or potentially make random responses to meet the requirements of the survey.¹

Even though the analysis of ranking data requires additional statistical work, rating systems are not without their statistical weaknesses. Respondents using a rating system often cluster their responses within a narrow subset of the range of options (Russell and Gray 1994), but no such 'underdispersion' is possible in a ranking system where the respondent must use the entire range of the scale. Additionally, rating systems cannot ensure that the scale is used consistently, either between or within respondents. It is possible that one respondent considers a score of 70 (out of 100) to be a high level of importance, while another respondent considers 70 to be a moderate level of importance.² Although a rating system is clearly better than a ranking system for assessing the distance between values for a single respondent, ratings cannot completely ensure that within-respondent ratings are consistent. For example, the distance between two values rated

30 and 40 may not be the same as the distance between two other values rated 80 and 90 in a respondent's mind.

It is no surprise that some researchers have taken a strong stance on the preferability of ratings for measuring values (Maio *et al.* 1996, Johnson *et al.* 1999) while others have strongly endorsed rankings (Krosnick and Alwin 1988). The current state of the issue is perhaps best described as unresolved, and most probably unresolvable. Neither method of value data collection is without methodological and statistical imperfections, and despite the sophisticated efforts of a number of researchers, neither ranking nor rating has been shown to be clearly superior. Therefore, the question should be reoriented away from the technical issues that have been the focus of the debate between the advocates of each method. Instead, the issue might be more productively explored from a theoretical direction. Since it is clear that either method for measuring the value system has both strengths and weaknesses, let us instead ask what each method assumes about the object of analysis itself, the value system. In other words, what is the value system and how is it organized? By addressing this question, the issue moves away from the statistical and administrative properties of each method and returns to the fundamental purpose of the research, exploring and explaining the value systems of individuals and groups.

A synthesized conceptualization of the value system

Underlying the two methods of measuring an individual's value system are fundamentally different concepts of the structure of the value system. By looking more closely at the methods, we can see how the conclusions about value systems are not only residuals of the method of data collection, but are expressions of the characteristics of the overall value system that are assumed to exist in the individual. Therefore, the question of ratings or rankings is not only one of method, but of the nature of values and their organization in the mind.

In an ipsative system, such as the Rokeach Value Survey or any other ranking system, values are arranged in a zero-sum structure by definition. If the ranking of one value increases by one rank, another value must decline by one rank. Rokeach was fully cognizant of this characteristic of his survey tool. He argued that while all values are considered to be important when thought of independently, activating a value in a behavioural situation requires relative evaluations of certain values against one another (Rokeach 1973). For Rokeach and other advocates of the ranking method, values represent mutually exclusive choices. In situations that call multiple values into possible action, one must be prioritized over the other(s). This means that as value structures change over time or differ across groups, the higher importance of one value must come at the expense of the importance of another value.

In contrast, a rating system does not require changes in the importance of some values to be compensated for by changes in other values. Since the respondent has the ability to give each value any rating without regard to the

ratings given to other items, the ratings of the values have no restrictions. The value system that is assumed in a rating system is one in which the importance of values are independent; there is no limit on the total amount of importance that is distributed among the values.³ As Kenneth Gergen (1991: 77) has argued, values ‘are sufficient unto themselves. To value justice, for example, is to say nothing of the value of love. . . . No one value in itself recognizes the importance of any alternative value’.

Even though these differences exist, it must be recognized that the two concepts of the value structure are not necessarily mutually exclusive. *One can have both an unlimited amount of total importance that is assigned to the values that constitute the system and a hierarchy in which the rank order is zero-sum.* The values that constitute the hierarchy can be understood to have quanta of importance associated with them. This allows for values to have independence in their associated importance but also exist in a zero-sum ordering. Consistent with Rokeach, values are weighed against one another when a decision must be made to act upon one or the other. However, it is also possible for the amount of importance assigned to a specific value to change without the rank of the value changing.

To illustrate this approach, consider a hypothetical value structure that contains only four values: family, work, hobbies, and religion. Each of these values is associated with a specific amount of importance that is scaled from 0 (no importance) to 100 (maximum importance). Now consider two individuals with the following distributions of importance⁴:

A: Family—90, Work—80, Hobbies—70, Religion—60

B: Family—70, Work—60, Hobbies—50, Religion—40

A ranking survey would show that these two people have the same value structure. Each respondent would report that family is most important, followed by work, hobbies, and religion, respectively. However, a rating system would show that there are substantial differences between A and B in their values. First, A places more importance on these values overall than B. Second, A places more importance on any specific value than B, even though they rank the value identically.

Depending on the question being asked in regard to the values of these individuals, our conclusions about the value systems of these individuals may differ. If the question is about which values will be acted upon in situations where choices must be made, the ranking and rating systems will both point us in the same direction. However, if the questions of interest are about the relative importance of a value for A as compared to B, the method will lead to different conclusions: ranking will indicate no difference whereas rating will show a difference. Specifically, we would conclude that while work has the same importance for each individual relative to the other values in the structure, the amount of importance that A assigns to work is greater than the value assigned to it by B. Neither a ranking nor rating measure by itself would reveal this pattern. Both of these conclusions are equally valid and therefore, the ‘most correct’ answer about their value systems is one that reveals both facts.

A second advantage in this approach is shown when we introduce change in the value system of A. Assume that over time or in response to some stimulus, the importance of family for A declines from 90 to 87, while the importance of work increases from 80 to 83. The ranking approach would conclude that there has been no change in the value system of A over time. This is true, as we would expect that in circumstances where family and work were to come into conflict, A would choose family at both times of measurement. However, the rating system also tells us that the importance of family has declined for A over time, while the importance of work has increased. If these observations were part of a study to determine whether A had been affected by some external stimulus, such as an increase in pay or a divorce, then ranking and rating approaches would lead us to two different conclusions. The best conclusion uses both pieces of information: the stimulus affected a change, but it was not large enough to change the ordering of the values of interest.

We can therefore see that the two concepts of the value system do not preclude a synthesis, but using one method to the exclusion of the other forces the assumption of a particular value structure. This assumption can then lead to different conclusions about the value systems of individuals across time or place and leads to the rating–ranking divergence. This is a false divergence, and by only using one method or the other, the two may appear to be contradictory. In fact, they ought to be seen as complementary.

Rating and ranking: an application

Very few values studies have been designed to make use of both ranking and rating approaches. One survey that has used both formats was the 1995–1997 wave of the World Values Survey (Inglehart *et al.* 2000), a cross-national study of values. As an experimental component, respondents in a number of nations in the study were asked a question that was first answered with a ranking system, and then asked the same question later in the survey, but with a rating system for response options. While the format of the questions only partially uses the full potential of either the rating method or the ranking method, the conclusions that are drawn from the data differ substantially, depending on the response format.

The respondent was presented with the following list of options on a card:

- maintaining order in the nation
- giving people more say in important government decisions
- fighting rising prices
- protecting freedom of speech

and then asked, ‘People sometimes talk about what the aims for the country should be for the next 10 years. On this card are listed some goals which different people would give top priority. Would you please say which one of these you, yourself, consider the most important?’ The respondent was also asked to indicate which option was the second most important.

The purpose of the question was to determine the respondent's position along a postmaterialist/materialist value scale. If the person indicated the first and third items were most important (in either order), she was classified 'materialist'; if the second and fourth choices were selected, the person was 'postmaterialist'; any other combination was classified as 'mixed' (Inglehart *et al.* 2000: 171). Although this is not an ipsative system (because the last two items are not ranked), the system has the functional characteristics of a traditional ranking system.⁵

In 25 nations,⁶ the survey also included a question that repeated the list and asked the respondent to rate each of the four items from 1 ('very important') to 4 ('not at all important'). While a four point scale may understate the actual variance of the assigned importance of each value both within individuals and across the groups, it provides a data set with rating system characteristics. Therefore, we can use the two sets of responses to compare the ranking and rating data from this survey across a number of nations.

Using responses to the ranking question in previous surveys, Inglehart has concluded that the aggregate location of the members of a nation on the materialist/postmaterialist scale correlates highly with the level of economic development in the country (Inglehart 1977, Abramson and Inglehart 1995, Inglehart and Baker 2000).⁷ Looking at the order of the nations by their average score on the bipolar scale in table 1, this assertion is supported by the ranking data from the 1995–1997 World Values Survey, as well. The nations that have the most strongly postmaterialist orientation are generally Western nations with advanced industrial economies, such as Germany, the USA, and Spain. In contrast, the nations with the strongest materialist orientations are generally underdeveloped (Bangladesh, Nigeria) or, as in the case of many of the former Soviet republics, suffering from extreme

Table 1. Materialism/postmaterialism mean individual score by nation, 1995–1997 World Values Survey (ranking system)

| Nation | Materialism/postmaterialism* | Nation | Materialism/postmaterialism* |
|--------------------|------------------------------|------------|------------------------------|
| Germany | 2.22 | Poland | 1.65 |
| Argentina | 2.15 | Estonia | 1.65 |
| USA | 2.12 | Armenia | 1.60 |
| Uruguay | 2.05 | Lithuania | 1.59 |
| Dominican Republic | 1.98 | Belarus | 1.58 |
| Spain | 1.97 | Georgia | 1.56 |
| Mexico | 1.96 | Nigeria | 1.55 |
| Chile | 1.87 | Bangladesh | 1.51 |
| Peru | 1.85 | Ukraine | 1.49 |
| Venezuela | 1.82 | Moldova | 1.47 |
| Brazil | 1.82 | Russia | 1.43 |
| Philippines | 1.71 | Azerbaijan | 1.42 |
| Latvia | 1.68 | | |

* Materialism/postmaterialism scale: postmaterialist = 3, mixed = 2, materialist = 1

economic duress. The correlation between the national average on the ranking-based materialism/postmaterialism scale and the 1997 gross national product per capita (GNPPC) bears out this relationship, with a value of 0.71, which is statistically significant at $p < 0.001$. Therefore, data collected with the ranking system support the conclusion that the average value orientation in a nation is related to national level of economic development.

However, when the ratings data are used to evaluate the value systems of individuals across nations, not only do the summary statistics take a different form, but the major conclusions about cross-national comparisons of value structures also differ. Instead of asking about the relative importance of materialist values *vis-à-vis* postmaterialist values, a rating system can inform researchers about the importance of both types of values. The former reveals which sets of values are acted upon when the two types of values compete with one another. The latter reveals the global importance of each type of value. It may be the case that nations that are postmaterialist on the ranking scale are this way because of the high importance placed on postmaterialist issues. However, it is also possible that postmaterialism scores highly in those nations as a result of the rejection of materialist values and a relative indifference to postmaterialist values. When one set of values must be chosen, postmaterialism may be preferred simply as the result of the distaste for materialism.

Table 2 shows the average rating given to the two materialist values and the two postmaterialist values in each of the nations in the survey. What is immediately striking is that although Germany is the most postmaterialist nation when the ranking data are used, the people of that nation do not rate the postmaterialist concerns particularly highly among the nations in the study (14th out of 25 nations). The main reason why the nation is high on the ranking list is the very low importance its citizens place on materialistic issues (lowest of the 25 nations in the study). Similarly, Spain and, to a lesser extent, Argentina and the USA also are not especially postmaterialist in comparison to other nations but are quite non-materialist.

Surprisingly, many of the nations that rate the postmaterialist concerns highest are measured by the ranking data as being relatively mixed (Venezuela, Brazil, Chile) or even quite materialistic in their overall orientation (Bangladesh, Nigeria). The ranking data do not describe these nations as postmaterialist because they also rate materialist concerns very highly. 'Mixed' Venezuela and Brazil are in the top three highest rating for both materialist and postmaterialist issues. 'Materialist' Bangladesh has the third highest rating of materialist issues, but also has the fourth highest rating of postmaterialist issues.

Correlations between the mean ratings and the gross national product per capita (GNPPC) for each nation also suggest that the main predictor(s) of the rating results differ from the main predictor(s) of the ranking results. The correlation between GNPPC and the average rating of the two materialism items across nations is 0.49, which is only significant at $p < 0.05$, and the correlation between GNPPC and the average of the postmaterialism items is -0.25 , which is non-significant ($p > 0.10$). While there is some degree of association between higher GNPPC and lower

Table 2. Mean materialism/postmaterialism ratings by nation, 1995–1997 World Values Survey

| Nation | Materialism* | Postmaterialism* | Materialism rank | Postmaterialism rank |
|--------------------|--------------|------------------|------------------|----------------------|
| Germany | 1.80 | 1.58 | 25 | 14 |
| Argentina | 1.43 | 1.38 | 18 | 6 |
| USA | 1.40 | 1.39 | 15 | 7 |
| Uruguay | 1.24 | 1.22 | 5 | 2 |
| Dominican Republic | 1.28 | 1.42 | 7 | 9 |
| Spain | 1.54 | 1.54 | 23 | 12 |
| Mexico | 1.41 | 1.47 | 17 | 10 |
| Chile | 1.28 | 1.37 | 8 | 5 |
| Peru | 1.45 | 1.58 | 20 | 13 |
| Venezuela | 1.10 | 1.18 | 2 | 1 |
| Brazil | 1.08 | 1.24 | 1 | 3 |
| Philippines | 1.39 | 1.51 | 14 | 11 |
| Latvia | 1.61 | 1.99 | 24 | 25 |
| Poland | 1.46 | 1.88 | 21 | 21 |
| Estonia | 1.44 | 1.81 | 19 | 17 |
| Armenia | 1.37 | 1.84 | 13 | 18 |
| Lithuania | 1.52 | 1.87 | 22 | 20 |
| Belarus | 1.36 | 1.81 | 12 | 16 |
| Georgia | 1.26 | 1.66 | 6 | 15 |
| Nigeria | 1.17 | 1.40 | 4 | 8 |
| Bangladesh | 1.11 | 1.34 | 3 | 4 |
| Ukraine | 1.34 | 1.89 | 10 | 22 |
| Moldova | 1.35 | 1.99 | 11 | 24 |
| Russia | 1.30 | 1.87 | 9 | 19 |
| Azerbaijan | 1.41 | 1.97 | 16 | 23 |

Note: Nations are listed in order of rank on materialism/postmaterialism scale (table 1).

* Rating scale: 1 = very important; 2 = important; 3 = not very important; 4 = not at all important

importance placed on materialist issues, the predicted association between higher GNPPC and higher importance placed on postmaterialist values is not present.

Therefore, even with ranking and rating systems that have restrictions on their variance, it can be seen that two different conclusions are drawn about differences in values across nations from the same question asked in two different ways. Ranking data support the hypothesis that the differences across nations in the importance their citizens place on materialist and postmaterialist concerns are related to economic conditions. However, when the importance of values is measured with a rating system, what appeared to be the importance of postmaterialist values in some nations could also be interpreted as indifference to (or rejection of) materialist values. Neither of these conclusions should be considered more correct than the other; rather, they represent two equally valid ways to describe value differences between nations.

Conclusion: beyond the dichotomy

The debate between advocates of rating and ranking systems for measuring values is now three decades old, and not much nearer to resolution than it has ever been, despite considerably sophisticated analyses of the statistical implications of each (Alwin and Jackson 1980, Krosnick and Alwin 1988). Each method has distinct advantages (statistical variety for rankings, ease of administration and analysis for ratings) and disadvantages (ipsative statistical complications for rankings, non-differentiation for ratings), but neither is clearly better than the other. As a result, the issue remains open to continued debate.

The traditional approach for comparing the two methods has been grounded in statistical evaluations of the data that are generated by each approach. However, the differences in the assumptions about the nature and structure of the value system that is employed by practitioners using either system have gone largely unaddressed. By using a ranking system, the researcher predicates the study on the fact that values exist in a hierarchical, zero-sum system. By using a rating system, it is assumed that the importance of one value has no necessary effect on the other values in the individual's system. The fact that either of these beliefs about the nature of the value system is being held to the exclusion of the other is rarely acknowledged by researchers.

It has been shown here that assumptions about the nature of the value system have significant effects on the conclusions that are drawn from values data. However, the conclusions drawn using one method are not necessarily to the exclusion of the other. Ranking data from the 1995–1997 World Values Survey show that there is significant variation across nations in the relative importance of postmaterialist and materialist values, but rating data reveal that the differences in relative importance are not necessarily due to the importance of one value and the lack of importance of the other. These results were generated despite the fact that the method of data collection was not optimal for assessing the synthesized values system that has been proposed. An optimal system would ask for a full ranking of the values under consideration and the rating component would use at minimum a Likert scale, if not a broader point system. Hopefully, ensuing research will be designed to more fully capture both the ranking and rating of values by individuals.

While there are restrictions on data collection and analysis in terms of time, funding, and respondent effort, it would not be difficult to construct a questionnaire that uses both methods. By using the two methods together, researchers not only generate better data about the value systems of individuals, but also adopt a more sophisticated model of the value system itself. Values may be ranked in a hierarchy in the human mind, but the items in the hierarchy may also change in their level of importance without affecting the amount of importance with which other values are held. This model of the value system needs to be tested further with empirical research. Methodological issues, such as the effects of repeating a question within a survey, also require examination. However, if the methodology of using both systems can be developed into a viable

approach, values research may finally move beyond the false dichotomy of rankings and ratings.

Acknowledgments

I would like to thank Reeve Vanneman, Stanley Presser, Laurie Sokol, the anonymous reviewers and the editors of *IJSRM* for their advice in the preparation of this article. Data from the World Values Survey were provided by the Inter-university Consortium for Political and Social Research, University of Michigan.

Notes

1. A related issue is Krosnick's (1991) concept of 'satisficing', in which respondents fail to fully evaluate the question being asked and therefore give a response that is influenced by such exogenous factors as response order, question wording, and/or social desirability bias. Rankings may be more likely to induce satisficing, as a result of the increased amount of effort required to complete the survey, but both rating and ranking are vulnerable to respondent satisficing.
2. However, statistical techniques, such as transformation of the ratings to individual z scores, can be used to remedy this issue.
3. Certain structural and psychological factors may affect the possible total amount of importance placed on the values. Individuals only have a finite amount of time and energy, which places limitations on the ability to engage in activities that verify the importance of their values. A person who lacks the time to work for social justice will tend to place less importance on the value as it is activated less often. In general, however, we can expect that the ceiling for total importance of values is rather high, especially because expressing importance is easier than actualizing all of the reported importance.
4. While individuals are being used in this example, the same points apply for comparing values across groups. A and B can also be groups with the data indicating the average value importance across the groups. The data analysis in the next section will show how the same argument can be applied to group measures of values.
5. There has been extensive debate over the validity of the scale as a measure of values (see most recently Clarke *et al.* 1999, Davis and Davenport 1999, Inglehart and Abramson 1999). The purpose of this study is not to assess the validity of the measure, but to demonstrate how the two forms of the question yield different data patterns across nations. Whether either form of the question is valid as a tool for either measuring postmaterialist values or predicting other beliefs and actions is not a question that I will take up here.
6. Data were collected in 31 separate surveys, some of which were regions within a nation. Data from the four Spanish surveys (Spain, Andalusia, Valencia, and Galicia), two USA surveys (USA and Puerto Rico), and two Russian surveys (Russia and Tambov) were combined to create single national observations.
7. An expanded form of this ranking system that uses three sets of four values has also been used in some studies, with very similar results. In the 1995–1997 World Values Survey, only the four value battery was used in both ranking and rating methods.

References

- Abramson, P.R. and Inglehart, R. (1995) *Value Change in Global Perspective* (Ann Arbor: University of Michigan Press).
- Alwin, D.F. and Krosnick, J.A. (1985) The measurement of values in surveys: a comparison of ratings and rankings. *Public Opinion Quarterly*, **49**, 535–552.

- Braithwaite, V.A. and Law, H.G. (1985) The structure of human values: testing the adequacy of the Rokeach value survey. *Journal of Personality and Social Psychology*, **49**, 250–263.
- Clarke, H.D., Kornberg, A., McIntyre, C., Bauer-Kaase, P. and Kaase, A. (1999) The effect of economic priorities on the measurement of value change: new experimental evidence. *American Political Science Review*, **93**, 637–647.
- Davis, D.W. and Davenport, C. (1999) Assessing the validity of the postmaterialism index. *American Political Science Review*, **93**, 649–664.
- Davis, J.A. and Smith, T.W. (1996) *General Social Surveys, 1972–1996: Cumulative Codebook* (Chicago: National Opinion Research Center).
- Feather, N.T. (1973) The measurement of values: effects of different assessment procedures. *Australian Journal of Psychology*, **25**(3), 221–231.
- Gergen, K.J. (1991) *The Saturated Self: Dilemmas of Identity in Contemporary Life* (New York: Basic Books).
- Inglehart, R. (1977) *The Silent Revolution: Changing Values and Political Styles among Western Publics* (Princeton, NJ: Princeton University Press).
- Inglehart, R. and Abramson, P.R. (1999) Measuring postmaterialism. *American Political Science Review*, **93**, 665–677.
- Inglehart, R. and Baker, W.E. (2000) Modernization, cultural change, and the persistence of traditional values. *American Sociological Review*, **65**, 19–51.
- Inglehart, R. et al. (2000) World Values Surveys, 1995–1997 (computer file), ICPSR version. Ann Arbor, MI: Institute for Social Research (producer). Ann Arbor, MI: Inter-university Consortium for Political and Social Research (distributor).
- Jackson, D.J. and Alwin, D.F. (1980) The factor analysis of ipsative measures. *Sociological Methods and Research*, **9**, 218–238.
- Johnson, M.F., Salis, J.F. and Hovell, M.F. (1999) Comparison of rated and ranked health and lifestyle values. *American Journal of Health Behavior*, **23**(5), 356–367.
- Kohn, M.L. (1977) *Class and Conformity: A Study in Values* (Chicago: University of Chicago Press).
- Kristiansen, C.M. (1985) Value correlates of preventive health behavior. *Journal of Personality and Social Psychology*, **49**, 748–758.
- Krosnick, J.A. (1991) Response strategies for coping with the cognitive demands of attitude measures in surveys. *Applied Cognitive Psychology*, **5**, 213–236.
- Krosnick, J.A. and Alwin, D.F. (1988) A test of the form-resistant correlation hypothesis. *Public Opinion Quarterly*, **52**, 526–538.
- Maio, G.R., Roesch, N.J., Seligman, C. and Katz, A. (1996) Rankings, ratings, and the measurement of values: evidence for the superior validity of ratings. *Basic and Applied Social Psychology*, **18**(2), 171–181.
- Mayton, D.M., II and Furnham, A. (1994) Value underpinnings of antinuclear political activism: a cross-national study. *Journal of Social Issues*, **50**(4), 117–128.
- Moore, M. (1975) Rating versus ranking in the Rokeach value survey: an Israeli comparison. *European Journal of Social Psychology*, **5**(3), 405–408.
- Moore, M. (1976) A cross-cultural comparison of value systems. *European Journal of Social Psychology*, **6**(2), 249–254.
- Ng, S.H. (1982) Choosing between the ranking and rating procedures for the comparison of values across cultures. *European Journal of Social Psychology*, **12**, 169–172.
- Rankin, W.L. and Grube, J.W. (1980) A comparison of ranking and rating procedures for value system measurement. *European Journal of Social Psychology*, **10**, 233–246.
- Reynolds, B.K. (1984) A cross-cultural study of values of Germans and Americans. *International Journal of Intercultural Relations*, **8**, 269–278.
- Rokeach, M. (1967) *Value Survey* (Sunnyvale, CA: Halgren Tests).
- Rokeach, M. (1968) *Beliefs, Attitudes, and Values* (San Francisco: Jossey-Bass).
- Rokeach, M. (1973) *The Nature of Human Values* (New York: Free Press).
- Russell, P.A. and Gray, C.D. (1994) Ranking or rating? Some data and their implications for the measurement of evaluative response. *British Journal of Psychology*, **85**, 79–92.
- Schwartz, S.H. (1992) Universals in the content and structure of values: theoretical advances and empirical tests in 20 countries. In M.P. Zanna (ed.) *Advances in Experimental Social Psychology* (New York: Academic Press), pp. 1–65.
- Thomas, C.B., Jr (1986) Values as predictors of social activist behavior. *Human Relations*, **39**(3), 179–193.