



Pergamon

*Int. J. Intercultural Rel.* Vol. 20, No. 2, pp. 189–198, 1996  
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0147-1767/96 \$15.00 + .00

S0147-1767(96)00003-X

## RIDING THE WAVES OF COMMERCE: A TEST OF TROMPENAARS' "MODEL" OF NATIONAL CULTURE DIFFERENCES

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**ABSTRACT.** *Trompenaars (1993) presents a seven-dimensional model of national culture differences which he argues is particularly relevant to the conduct of international business. Data read from his book were treated using correlation and factor analysis at the country level. Results indicate that only two dimensions can be clearly confirmed statistically: Individualism/Achievement and Universalism/Diffuse. Both are correlated with Hofstede's Individualism dimension. The re-analysis raised concerns about Trompenaars' conclusions and about his methodology. It is argued that the theory in the book is not supported by the database. Suggestions are made on how the database could be validly studied. However, the evident lack of content validity of the instrument used will remain a major concern. Copyright © 1996 Elsevier Science Ltd.*

### TROMPENAARS' MODEL AND DATABASE

In *Riding the Waves of Culture* (London: The Economist Books, 1993), Dutch management consultant Fons Trompenaars proposes a model of seven fundamental dimensions of (national) culture for understanding cultural diversity in business (p. 8). The first five factors describe relationships with other people. They are: universalism versus particularism, individualism versus collectivism, neutral versus emotional, specific versus diffuse, and achievement versus ascription. The remaining two dimensions are orientation in time and attitudes towards the environment.

In three opening chapters, *Riding the Waves of Culture* introduces the culture concept, and relates differences in national culture to differences in ways of organizing. Chapters 4–10 describe the seven dimensions.

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The author thanks Philip Lincoln and Frank van Baren for their help in data extraction and processing. Reprint requests should be sent to Ms Ingrid Regout, IRIC, University of Limburg, P.O. Box 616, NL-6200 MD Maastricht, The Netherlands.

Chapter 11 deals with corporate cultures, and Chapter 12 offers a perspective for international management.

In the book, Trompenaars illustrates his arguments with his own questionnaire data. His database covers about 15,000 respondents. Some were participants in the author's cross-cultural training programs; others were employees in 30 companies in 50 different countries. Of the respondents, 75% belong to management, while the remainder are general administrative staff, mainly female. The book does not mention whether the questionnaire was translated or administered in English.

The questionnaire was originally designed for the author's doctoral dissertation (Trompenaars, 1985). The dissertation used data obtained from a 79-item survey across 653 respondents, divided over nine countries, two industries (oil and hosiery), and seven job categories (from unskilled labor to managers of managers).

The survey questionnaire used in the dissertation research already consisted of seven subscales, corresponding to the seven dimensions of Trompenaars' later work, plus demographics. For four subscales the items were taken from existing instruments described in the (U.S.) social science literature; for the remaining three the author designed new items. Items included long questions describing a dilemma situation and asking the respondent to choose a solution (several of these were taken from Stouffer and Toby, 1951), as well as shorter questions asking the respondent to choose between two alternative statements.

The thesis concluded that the nine countries studied could be divided into two types: "Left Brain" (U.S.A., Netherlands, Sweden, Austria, and Greece) and "Right Brain" (Venezuela, Spain, Italy, and Singapore). Country scores on all subscales were correlated with this distinction, so that Left Brain cultures were at the same time universalist, individualist, neutral, specific, attributing status by achievement, future-oriented, and dominating nature, while Right Brain cultures were the opposite.

The database used in the 1993 book is based on the same questionnaire, or a revised version of it, but with a much larger group of respondents. The analysis, however, no longer refers to Left or Right Brain cultures. In the various chapters of the book the answers on 17 questions from the questionnaire are shown (16 are shown in bar charts as percentages by country, and one is shown in a country ranking). These answers are not summarized into country scores on the seven dimensions, however, so it is not clear where exactly a country is supposed to be positioned on a dimension; nor are country scores on the dimensions validated against measurements independent of the research, either country-level data (like GNP/capita), or survey-based (like the Eurobarometer public opinion data in the countries of the European Union).

Methodological aspects of the questionnaire survey are discussed in a three-page Appendix (pp. 179–181) by Dr Peter B. Smith of the University

of Sussex in the U.K. Smith analysed the scores for the questionnaire items at the country level for 47 countries with more than 50 respondents each. The original 79-item questionnaire was reduced to 57 items to improve reliability, measured by Cronbach alpha.<sup>1</sup> The Appendix listed alpha values for six of the seven subscales. The seventh, Time Orientation, could not be evaluated this way, because it did not comprise a series of free-standing items. Smith also showed a table of correlations among the seven scales (p. 181). Correlations with Time Orientation are insignificant; the other six scales all show significant intercorrelations. In Trompenaars' 1985 dissertation the seven categories were all correlated with his Left/Right Brain typology, also suggesting substantial intercorrelations. With the extended database, this still appears to be the case.

### CORRELATIONS AMONG TROMPENAARS' DIMENSIONS

Commenting on the significant linkages between several of the scales, Smith (p. 180) comments:

The fact that some of these correlations are quite substantial does not necessarily imply that separating out the different dimensions is unnecessary. Significant country-level correlations between, for instance, universalism and achieved status indicate only that both orientations are high in a particular national culture, and not that they are necessarily endorsed by the same individuals or within the same organizations.

This is a puzzling comment. Its first part is a partial truth. Significant country-level correlations between subscales do indicate that both orientations are high in particular national cultures, but they also indicate that both are *low* in other national cultures: in fact they mean that if you know one orientation for a country, you can fairly accurately predict the other. The orientations may be conceptually distinct in the researcher's mind, but the empirical data show that in the real world, they usually occur together.

The second part of the statement (orientations are not necessarily endorsed by the same individuals etc.) is a truism, but as an argument for separating out highly correlated dimensions at the country level it is a *non sequitur*. It confuses the individual with the country level of analysis. Individual-level, organization-level, and ecological (country-level) correlations are all different things. Distinguishing between these levels is an essential condition for cross-cultural research. Trompenaars' book is about differences between countries, not between individuals. It describes

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<sup>1</sup>It is not stated whether the Cronbach alpha scores presented are based on individual or on ecological, that is country-level, scores, but in the 1985 thesis the reliability of the subscales was assumed based on correlations of items across individual respondents.

(country-level) cultures, not (individual-level) personalities. Whatever one does at the country level should be supported with arguments applicable at that level.

Trompenaars' country data have not been published before, but one can read country scores on some of the questions from the diagrams published in the 1993 book. Doing this, one arrives at a 17 (questions)  $\times$  39 (countries) matrix, which can be subjected to a question  $\times$  question correlation analysis. This therefore is an *ecological* correlation analysis.

As stated earlier, each of the seven dimensions in Trompenaars' model has a chapter in the book devoted to it. Each of these chapters (except the one on Time Orientation) contains one or more diagrams showing the percentage of respondents in each of the countries studied who gave a particular answer. The questions thus serve to illustrate the meaning of the dimensions. Three additional questions are shown in the chapter on corporate cultures.

If the seven dimensions are both internally coherent and mutually distinct, we should expect that questions cited within the same chapter are strongly intercorrelated (at the country level), but questions cited within different chapters are less strongly correlated. Table 1 tests to what extent this is true. The actual correlation pattern does not support the attribution of the questions to the chapters (dimensions) in the book. In all cases, questions cited within a chapter are more strongly correlated with some questions from other chapters than with the other questions cited within the same chapter.

A 17  $\times$  39 ecological correlation matrix begs some kind of simplification by multivariate methods. I performed an ecological factor analysis with orthogonal varimax rotation (which means that the factors to be extracted will be statistically independent). In ecological factor analysis the usual caution against small numbers of cases does not apply: the reliability of the factors does not depend on the number of countries, but on the number of individual responses integrated into the country scores, which is nearly always more than sufficient.

The results of the factor analysis are shown in Table 2. The scree plot shows that a maximum of six factors can be extracted (eigenvalues over 1), but that the last two factors explain hardly more than the original variables. Not surprisingly the first factor is very strong, accounting for 40% of the total variance: this is because many of the questions are intercorrelated. The influence of the first factor is reduced by the rotation process which reshuffles the original factors so as to separate the variables into groups. Successive rotation with 2, 3, and 4 factors showed the 4-factor solution to produce the best separation of variables. These four factors together explain 72% of the variance.

The factors extracted after rotation are listed in the lower part of Table 2. Factor 1 mainly combines items from Chapter 5 (individualism)

TABLE 1

**Correlations among Trompenaars' Questions in Relation to the Chapter in which they are Cited**

| Chapter | Dimension          | Number of items | Correlations among items |  |
|---------|--------------------|-----------------|--------------------------|--|
|         |                    |                 | Same chapter             | Highest correlation with items in other chapters |
| 4       | Universalism       | 3               | .70                      | .77 (ch. 7)                                      |
|         |                    |                 | .60                      | .74 (ch. 7)                                      |
|         |                    |                 | .49                      | .73 (ch. 8)                                      |
| 5       | Individualism      | 3               | .50                      | .63 (ch. 4)                                      |
|         |                    |                 | .47                      | .51 (ch. 7)                                      |
|         |                    |                 | .12                      | .57 (ch. 8)                                      |
| 6       | Neutral/emotional  | 1               |                          | -.60 (ch. 7)                                     |
| 7       | Specific/diffuse   | 2               | .72                      | .77 (ch. 4)                                      |
|         |                    |                 |                          | .74 (ch. 4)                                      |
| 8       | Achievement        | 2               | .65                      | .73 (ch. 4)                                      |
|         |                    |                 |                          | .75 (ch. 11)                                     |
| 9       | Time               | 0               |                          |  |
| 10      | Environment        | 2               | .02                      | .57 (ch. 4)                                      |
|         |                    |                 |                          | .58 (ch. 7)                                      |
|         |                    |                 |                          | .56 (ch. 8)                                      |
|         |                    |                 |                          | .64 (ch. 11)                                     |
| 11      | Corporate cultures | 3               | .57                      | .70 (ch. 4)                                      |
|         |                    |                 | .26                      | .66 (ch. 7)                                      |
|         |                    |                 | .03                      | .75 (ch. 8)                                      |
|         |                    |                 |                          | .64 (ch. 10)                                     |

with items from Chapter 8 (achievement); Factor 2 combines items from Chapter 4 (universalism) with Chapter 7 (specific/diffuse) items. Factor 3 is a weak factor dealing with concepts of organization, and Factor 4 is a residual factor dealing with the issue of controlling nature (Chapter 10); the loading for "express feelings" is puzzling, but this question has only been used in 10 out of 39 countries.

Thus the empirical analysis of Trompenaars' own data provides only limited support for his seven-dimensional model. At best, three separate dimensions really appear, plus maybe an organization factor which was not presented as a dimension. If we forget for a moment about "Time Orientation" which was not included in the analysis, the minds of Trompenaars' respondents distinguished at maximum four separate issues which recombined the original categories.

Now that we have empirical factors, we can also look for external validation of these factors. I have computed approximate country scores on the four factors (taking the two highest loading items for Factors 1-3 and the single highest loading item for Factor 4), and correlated these with

TABLE 2

## Results of an Ecological Factor Analysis of 17 Questions across 39 Countries

| Factor | Scree plot |               | Cumulative |
|--------|------------|---------------|------------|
|        | Eigenvalue | % of variance |            |
| 1      | 6.8        | 39.9          | 39.9       |
| 2      | 2.2        | 13.2          | 53.0       |
| 3      | 1.7        | 10.3          | 63.3       |
| 4      | 1.4        | 8.3           | 71.6       |
| 5      | 1.2        | 7.1           | 78.7       |
| 6      | 1.1        | 6.6           | 85.3       |

  

| Question <sup>a</sup> | Loading | Factor loadings                              |
|-----------------------|---------|--|
|                       |         | Issue  |
| <i>Factor 1</i>       |         |  |
| 5:48                  | .85     | Individual freedom                           |
| 8:95                  | .79     | Acting as suits you                          |
| 4:39                  | .75     | Would not tip off a friend                   |
| 8:96                  | .71     | Respect not based on family                  |
| 11:144                | .69     | Low hierarchical triangle                    |
| 5:52                  | .64     | Individual decisions                         |
| 5:54                  | .56     | Individual responsibility                    |
| <i>Factor 2</i>       |         |  |
| 4:37                  | .85     | Would not write false review                 |
| 4:35                  | .74     | Would not give false testimony               |
| 7:86                  | .69     | Company should not provide housing           |
| 11:143                | .68     | Leader not seen as a father                  |
| 7:80                  | .64     | Refuse to paint boss' house                  |
| 10:128                | .59     | What happens to me is my own doing           |
| <i>Factor 3</i>       |         |  |
| 2:18                  | .72     | Company is system rather than social group   |
| 11:150                | .66     | Function rather than personality             |
| <i>Factor 4</i>       |         |  |
| 10:127                | .83     | It is worth trying to control nature         |
| 6:64                  | -.57    | (reversed) Would express feelings when upset |

<sup>a</sup>Chapter and page numbers as in Trompenaars (1993).

the scores on the five empirical dimensions of national cultures found in my own research (Hofstede, 1991). Thirty-five countries are represented in both studies, but because of missing items, scores on Factor 1 are only available for 23 of these countries, on Factor 2 for 26 countries, on Factor 3 for 34 countries, and on Factor 4 for 30 countries. Scores on the Hofstede dimension of Long Term Orientation are available for 16 of the countries only.

TABLE 3

## Correlations between Four Trompenaars Factors and Five Hofstede Dimensions

|                         | Trompenaars (1993) |                   |          |          |
|-------------------------|--------------------|-------------------|----------|----------|
|                         | Factor 1           | Factor 2          | Factor 3 | Factor 4 |
| <i>Hofstede (1991):</i> |                    |                   |          |          |
| Power distance          | -.52 <sup>b</sup>  | -.70 <sup>a</sup> |          |          |
| Individualism           | .64 <sup>a</sup>   | .82 <sup>a</sup>  |          |          |
| Masculinity             |                    |                   |          |          |
| Uncertainty avoidance   | -.53 <sup>b</sup>  |                   |          |          |
| Long term orientation   | -.69 <sup>b</sup>  | -.66 <sup>a</sup> |          |          |

<sup>a</sup>Significant at .01-level; <sup>b</sup>significant at .05-level; significance limits vary according to the number of available cases.

The results are listed in Table 3. Factors 1 and 2 appear to be correlated with both my Individualism and small Power Distance scores, which is remarkable because Factors 1 and 2 are mutually independent.<sup>2</sup> The correlations are strongest for Factor 2. Factor 1 is also associated with weak Uncertainty Avoidance, and more than Factor 2 with Short Term Orientation. There are no correlates of Masculinity/Femininity in Trompenaars' data, nor are there correlates of his Factors 3 and 4 among my dimensions. However, these last two factors are only based on two questions and one question respectively, which is unlikely to give them sufficient reliability for correlating significantly with outside measures.

To conclude, the above comparison between two independent studies shows that Trompenaars' questionnaire measures mainly what I called Individualism; the large number of intercorrelated items dealing with this concept can be split into two groups, one combining Trompenaars' Individualism with Achievement, and the other Universalism with Specific/Diffuse. The other external correlations found point to possible additional connotations in Trompenaars' questions that he has not explored.

### A CRITIQUE OF TROMPENAARS' APPROACH

It is evident that Trompenaars confuses conceptual categories with dimensions. Conceptual categories are present in the mind of any investigator who sets out to do research. They belong to the culture of the person or persons who designed them—in Trompenaars' case, American sociologists and anthropologists of the 1950s and 1960s.

<sup>2</sup>The approximated factor scores are not quite independent, both because they were computed on two items only and because of missing data on these items. The intercorrelation of the approximated factor scores for Factors 1 and 2 is .48, not significant. The approximated factor scores for Factor 3 show marginally significant correlations of .54 and .51 with Factors 1 and 2, respectively.

The origin of the first five of Trompenaars' "dimensions" is the "General Theory of Action" by functionalist sociologist Talcott Parsons, published with the co-authorship of Edward Shils (1951). These authors labelled the dimensions "pattern variables." Trompenaars' "Individualism versus collectivism" was called by Parsons "Self-orientation versus collectivity-orientation"; it only occurs in the earlier versions of his list of pattern variables. The term "Individualism versus collectivism" as a cultural qualifier was introduced by the present author (Hofstede, 1980; Kim, Triandis, Kagitcibasi, Choi & Yoon, 1994). Parsons' theory was speculative; it was one scholar's interpretation of reality as he perceived it, guided by a strong belief that all social phenomena should serve a function. This kind of philosophy was rooted in American society of the 1940s. I know of no research supporting Parsons' claim that these pattern variables determine all human action, if such a claim could ever be supported.

The other two of Trompenaars' "dimensions" are taken from a book by anthropologists Florence Kluckhohn and F. L. Strodtbeck (1961). Their classification of five "value orientations" was inspired by a field study of five geographically close, small ethnic or religious communities in south-western U.S.A. The five orientations are: (1) human nature, from evil to good; (2) relationship to the environment; (3) orientation in time; (4) orientation toward activity, and (5) relationships among people, from lineal to collateral. From these, Trompenaars took the second and third only.

The purpose of research is to replace preconceived notions with empirical findings. The choice of a research instrument is obviously always influenced by existing theory and preconceived notions. By exposing this instrument to the responses of a research population, data are collected that should serve to revise the preconceived notions and formulate a new theory.

In his dissertation, Trompenaars has gone through this process. Unfortunately, his research samples were small and poorly matched; also, a number of nine countries is statistically insufficient to develop a multidimensional model. The empirical "model" that he derived was the simplest possible, but probably the only one that his limited database would allow: one single dimension, and this again simplified into two opposite ideal types, Left Brain and Right Brain cultures. The labels are unfortunate, and rather out of fashion now. Regardless of the labels, the typology is not very useful for understanding cultural diversity.

Since 1985 Trompenaars has compiled much more data, which should allow for a proper multidimensional analysis. This, however, has not yet been done. The book has not resumed the conclusions of the dissertation; it has gone back to the original seven preconceived dimensions. Apart from showing some bar charts in his book — the ones I analysed —



Trompenaars does not seem to have made any use of his database. Smith's note in the book's Appendix only scratches its surface. For one thing, if six of the seven scales now have sufficient reliability,<sup>3</sup> why does Trompenaars not show the scores of the countries in the data bank on these six dimensions? That would be crucial information for readers wanting to know about cultural diversity.

The data bank may still prove an unexplored treasure. Exploring it will involve at least the following steps:

1. Clean the data. The data bank seems to be filled by "convenience samples," collected because they happened to be available, without central control. Beyond errors of collection, translation, and processing, such a set contains unmatched country data that have to be matched first.
2. Multivariate analysis at the ecological (country) level, as in the factor analysis shown above. The particular statistical technique to be used is a matter of taste.
3. Extract whatever sensible and robust dimensions arise from this analysis, and reformulate the original framework accordingly.
4. Show the scores of all countries studied on these new dimensions.
5. Hypothesize what outside data, independent of this researcher, this data bank, and this method, might correlate with the various dimensions. Validate and reinterpret the dimensions according to the pattern of correlations with outside measures found. As my quick analysis shown above has demonstrated, Trompenaars' data can produce findings that correlate with mine, but they must be able to produce other meaningful correlations with outside data.<sup>4</sup>

A serious shortcoming of Trompenaars' data bank which no professional analysis can correct is its evident lack of content validity. Content validity is the extent to which an instrument covers the universe of relevant aspects of the phenomenon studied, in our case national culture. Trompenaars did not start his research with an open-ended inventory of issues that were on the minds of his future respondents around the world; he took his concepts, as well as most of his questions, from the American literature of the middle of the century, which was unavoidably ethnocentric. He did not change his concepts on the basis of his own findings

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<sup>3</sup>Whether the subscales really have sufficient reliability for distinguishing between countries remains to be proven, as it seems that Smith's reliability tests were done at the individual level, and not at the country level.

<sup>4</sup>In my study, scores for 40 countries on four empirical dimensions were shown to correlate significantly with nine other survey studies of narrow samples, six studies of representative national samples, and 29 national indicators taken from economic, political, sociological, psychological, and medical statistics (Hofstede, 1980, pp. 326–331). Since this was published, the number of validations has continued to grow.

either, nor did he follow the development of the state-of-the-art in comparative culture research since 1961.

Trompenaars does, however, ride the waves of commerce: he tunes his messages to what he thinks the customer likes to hear. In Parsons' functionalist scheme, the main source of Trompenaars' model, there was no place for dysfunctional and destructive elements. Therefore, in Trompenaars' questionnaire and book, controversial issues central to cultural conflicts, like power struggle, corruption, exploitation, aggression, anxiety, and differing concepts of masculinity and femininity, are rarely addressed. The result is a fast food approach to intercultural diversity and communication.

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