

Cross-Cultural Codes of Modernization

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1. INTRODUCTION

A cross-cultural modernization scale is constructed using a world wide sample of one hundred and thirty six societies in the Standard Cross-Cultural Sample¹. The operational definition of modernization is a change from traditional customs to ones that are forcibly or voluntarily borrowed from a dominant society that results in changes in behavior or customs. As a result of using principal component analysis, we interpret the modernization process as a series of four separate stages that societies go through (Divale and Seda 2001). Although this is not discussed in the present paper, we postulate the five stages of the modernization process as: the first stage (changes in government, trade, and education); the second stage (changes in health, technology and transportation); the third stage (changes in family structure, religion and personal toilet), and last stage (changes in behavior).

Modernization occurs when a more dominant and complex society comes into sustained contact with a less complex society and the more dominant and complex society exerts an influence for change in the less complex society. Some of the change is involuntary, such as the influence of technology and more complex social organization imposed by the dominant culture, and some of the changes are voluntary, such as changes in role expectations and material culture desired by the members of the less complex society. When the differences in complexity between the two cultures are great the results can be psychologically traumatic (Wallace 1966, 1969).

Much of the literature on modernization has focused on changes in the mental outlook of members of cultures that are adopting “Western” values and behavior as a result of colonial heritage. However, this process has occurred whenever a more complex culture conquered or had sustained contact with less complex cultures. One can imagine that these same processes happened when imperial Romans conquered Spain and Gaul, when the Harrapa civilization spread in the Indus valley, and when the Assyrians conquered Mesopotamia. The birth of Christianity is probably the result of a revitalization of Israeli culture caused by Roman conquest and influence. The process of changes in worldview that occurs among members of the conquered culture is what we call “modernization.” In general, social scientists measure these changes in worldview through changes in the material and social reality of the

conquered culture. Elsewhere (Divale and Seda 2001) we have a more extensive discussion of this topic. In this paper we primarily present the codes for modernization. The codes are included in the attached ASCII file STDS84.DAT and its accompanying codebook file: STDS84.COD. We also include a fully labeled SPSS data file: STDS84.SAV.

2. MEASURING MODERNIZATION

The premise behind using a modernity scale is that all societies lie on a single dimensional continuum from traditional to modern. Societies that are industrialized would lie higher on the continuum than preindustrialized societies. Coughenour and Stephenson (1972) reviewed the literature on individual measures of modernity and Armer and Schnaiberg (1972) examined four different scales constructed and used by Smith and Inkeles (1966), Kahl (1968), and Armer (1970). They found that the scales tested in third world countries were cross-national, rather than cross-cultural, in nature, that there were *prima facie* differences in their content, and that no information was available on their reliability and validity. Then, Armer and Schnaiberg (1972) tested the scales on a sample of 202 married white males from lower to middle class groups in an uptown Chicago area. They found Kahl's to be the best, but reliability and validity were low on all of the scales. Their findings do not indicate that modernity scales are universally invalid but that more work is needed in order to refine them. The modernization scale we present here is a true cross-cultural scale because it is based on different societal units, which hold the human variation constant, and compares different cultures on a continuum rather than individuals.

3. OPERATIONALIZATION OF MODERNIZATION

Weisner & Abbott (1975) define modernization as the product of multiple experiences with the mass media and with modern institutions, for instance, schools, factories, or bureaucratic situations. Stephenson (1968) defines modernization as the movement of persons or groups along a cultural dimension from what is defined by the cultural norms as traditional toward what is defined by the same culture as modern. Smith and Inkeles (1966) state that modern generally means a national state characterized by a complex of traits including urbanization, high level of education, industrialization, high rates of social mobility, and the like. Many of the items used in instruments of individual measures of modernization suggest they are measuring psychological change in the individual as he or she goes from a traditional to a modern worldview.

In the present paper *modernization is defined as a change from traditional customs and behaviors to ones that are forcibly or voluntarily borrowed from a dominant society that results in changes in the behavior and worldview of its people or customs.* We operationalized this definition by counting the changes made in any of the following areas of culture:

1. Trade

- 1.1 Changes in trade and trade goods such as iron axes, domestic products, domestic projects, tools
- 1.2 Introduction of wage labor and immigrant workers
- 1.3 Introduction of monetary system such as money

2. Technology
 - 2.1 Introduction of foreign goods such as weapons
 - 2.2 Minor technological developments such as wheels, carts, plough, changes in house construction
 - 2.3 Major technological changes such as industrialization, factories, mining, large machinery

3. Agriculture
 - 3.1 Changes in agriculture and crops
 - 3.2 Agricultural improvements, improvement in farming methods, fertilization, irrigation, food preservation
 - 3.3 Introduction of new livestock

4. Transportation
 - 4.1 Mechanical transport (automobiles, railroads, buses)
 - 4.2 Changes and introduction of water transport
 - 4.3 Introduction of roads and highways

5. Government, Political and Legal system
 - 5.1 New positions such as government officials
 - 5.2 Changes or implementation of foreign judicial system
 - 5.3 Political changes, uprising, cargo cults
 - 5.4 Large scale projects introduced by outside agencies such as dams, cities, land distribution, taxation, roads

6. Family/Social Organization
 - 6.1 Changes in family structure such as place of birth, bride price, breaking up of the family, endogamy, mixed-marriages, weddings, kinship terminology, separation of the sexes
 - 6.2 Change in marriage rituals, weddings
 - 6.3 Change in choice of spouse, mixed-marriages, etc.
 - 6.4 Change in female role or status

7. Body toilet, Adornment and Dress
 - 7.1 Changes in body toilets such as piercing, jewelry
 - 7.2 Changes in dress customs

8. Behavior
 - 8.1 Introduction of drugs such as tobacco, alcohol
 - 8.2 Changes in food processing such as cooking methods

9. Information and Education

9.1 Changes in communication and the arts such as telegraph, American films, songs, dance

9.2 Changes in education such as schools, teachers

9.3 Introduction of contact languages, foreign words, vocabulary distortion, pidgin languages

10. Health

10.1 Introduction of foreign medical practices, hospitals

10.2 Introduction of foreign diseases

10.3 Changes in sanitation methods

11. Religion

11.1 Changes in native religion

11.2 Introduction of foreign religion

11.3 Changes in burial practices or other rituals

These eleven areas cover all aspect of culture: the techno-economic-ecological base, social structure, and ideological.

4. SAMPLE

The sample chosen to measure modernization and test hypotheses was the 136 societies that overlap both the Standard Cross-Cultural Sample (Murdock and White 1969) and the Human Relations Area Files (Ember and Ember 1988). The distribution of the SCCS covers all major regions of the world: sub-Saharan Africa (28 societies), Circum Mediterranean (28 societies), East Eurasia (34 societies), Insular Pacific (31 societies), North America (33 Societies), South and Central America (32 societies). This sample was chosen because it contains some of the world's best-described societies and over 1800 cross-cultural variables have been already measured for societies in the SCCS. Having these societies as part of the HRAF also makes retrieval of ethnographic data cost effective.

5. CODING PROCEDURES

Modernization was coded by examining relevant categories of the subject index of the HRAF files, the *Outline of Cultural Materials* [OCM] (Murdock, Ford, Hudson, Kennedy, Simmons, and Whiting 1982). Subject categories 868-Transmission of skills, 869-Transmission of beliefs, and 177-Acculturation were selected, but category 177-Acculturation contained the best information to code modernization. Ten societies were chosen and examined for any mention of cultural change and/or acculturation from traditional customs to those borrowed from a more advanced society. Each mention of changes in custom, behavior, or technology was placed on a separate index card. A total of one hundred and six indicators of changes were found. Once these ten societies were completely examined, we began a pile sort of the indicators by sorting them into piles that were similar in content. We both had to agree on the content of the piles and the overall topic they represented. On our first try, we

had sixteen topic piles that were then reduced to twelve and, finally, to eleven piles. A second group of ten societies was selected and we attempted to apply changes reported to our different topic piles. It is through this process that we reduced the number of separate piles from 16 to 11. The eleven topics are the ones listed in the operational definition of modernization. The indicators of modernization used to do the pile sorts were not picked as being what we theoretically expected to be the best indicators but were noted because they were reported as changes in ethnographic reports.

A code sheet was constructed with brief instructions. The topics and subtopics were listed on the code sheet with an example on how the data should be cited. A total of one hundred and thirty six societies were coded by looking for quotations that mentioned changes in traditional customs and behavior, and who the initiators were that introduced the new behavior or customs. For example, one quote for the Shilluk, an African society, mentions that the soil they used is not productive for growing more than one or two crops (Westermann 1912). Missionaries had shown them that different fruit crops could be grown. From this quote “new crops” for the topic 3.1 Agriculture, was coded and also 11.2 “introduction of foreign religion” was coded for the topic of religion. These decisions were based on the fact that the primary goal of missionaries is to convert the native population to a religion of the dominating society.

The eleven major topics of modernization change produced a total of 33 different categories where changes were reported. These are shown in the tables below along with the frequency distribution of each category. Changes were recorded as either absent or present, but if more than one change occurred each change was counted separately. Thus the first topic is Trade, which has three sub-categories: Trade goods, wage labor, and a monetary system. For 27 societies no changes in trade goods were reported, but at least one change was reported for 87 societies, and 21 societies reported two changes in trade goods. By studying the ratios of Absent to Present in the following tables, one gets a sense of which changes occur more frequently. For example, changes in trade goods, the introduction of minor technology, government officials, and in the judicial system. There are also frequent changes in dress, cooking methods, communication, and religion. One can see these changes arriving in the order of contact: first traders, then missionaries, and finally colonial officials.

6. RELIABILITY AND VALIDITY

The second author did the coding as part of his senior thesis (Seda, 1996). As a result, though all items in the codes refer to changes in behavior and customs directly related to the concept of modernization and the second author is an experienced cross-cultural coder, we lack any indicators of reliability or validity, other than face validity.

7. DISCUSSION

The frequency distributions of the eleven main topic categories are shown in the following tables. These scales were constructed by adding the frequencies of the sub-categories. For example, the category Trade includes the sum of all changes in trade goods, wage labor, and monetary systems for a society. The eleven topics are grouped according to the main divisions of culture: Techno-ecological-economic, social organization, and ideology. As might be expected, the largest number of changes is in the techno-economic and social organization areas of culture, however, there are significant changes even in the ideological sphere.

We present here the first true cross-cultural measures of modernization for a worldwide sample of 136 societies. It is hoped that these codes will allow researchers to test the many hypotheses concerning modernization that have been postulated in the literature but remain untested. Elsewhere we have tried to interpret the modernization process as a series of four separate stages that societies go through (Divale and Seda 2000). We attempted this analysis using principal component analysis, and we also tested five separate hypotheses concerning modernization with moderate success. It appears that the first stage (changes in government, trade, and education) and last stage (changes in behavior) of the modernization process are related to the hypotheses. The second and third stages are not. Even if one does not consider them a progression of stages, but just different concepts or processes, it appears only two of them are related. In any advent, the correlations are low and further research must be done.

Fifty of the missing cases in the Standard Cross-Cultural Sample were not examined because they are not currently in the Human Relations Area Files, and one of the societies examined (the Rwala) had no data.

1806. Trade: 1.1. Changes in Trade and Trade Goods such as Iron Axes, Domestic Products, Domestic Projects, Tools

N	CODE	DESCRIPTION
51	.	Missing data
27	0	Absent
87	1	Present
21	2	2 additional items present

1807. Trade: 1.2. Introduction of Wage Labor and Immigrant Workers

N	CODE	DESCRIPTION
51	.	Missing data
67	0	Absent
67	1	Present
1	2	2 additional items present

1808. Trade: 1.3. Introduction of Monetary System such as Money

N	CODE	DESCRIPTION
51	.	Missing data
59	0	Absent
76	1	Present

1809. Technology: 2.1. Introduction of Foreign Goods such as Weapons

N	CODE	DESCRIPTION
51	.	Missing data
66	0	Absent
69	1	Present

1810. Technology: 2.2. Minor Technological Developments such as Wheels, Carts, Plough, Changes in House Construction

N	CODE	DESCRIPTION
51	.	Missing data
47	0	Absent
72	1	Present
11	2	2 additional items present
5	3	3 additional items present

1811. Technology: 2.3. Major Technological Changes such as Industrialization, Factories, Mining, Large Machinery

N	CODE	DESCRIPTION
51	.	Missing data
96	0	Absent
35	1	Present
4	2	2 additional items present

1812. Agriculture: 3.1. Agricultural Improvements, Improvement in Farming Methods, Fertilization, Irrigation, Food Preservation

N	CODE	DESCRIPTION
51	.	Missing data
59	0	Absent
76	1	Present

1813. Agriculture: 3.2 Changes in Agriculture and Crops

N	CODE	DESCRIPTION
51	.	Missing data
74	0	Absent
56	1	Present
5	2	2 additional items present

1814. Agriculture: 3.3. Introduction of New Livestock

N	CODE	DESCRIPTION
51	.	Missing data
85	0	Absent
50	1	Present

1815. Transportation: 4.1. Mechanical Transport (Automobiles, Railroads, Buses)

N	CODE	DESCRIPTION
51	.	Missing data
99	0	Absent
36	1	Present

1816. Transportation: 4.2. Changes and Introduction of Water Transport

N	CODE	DESCRIPTION
51	.	Missing data
109	0	Absent
26	1	Present

1817. Transportation: 4.3. Introduction of Roads and Highways

N	CODE	DESCRIPTION
51	.	Missing data
112	0	Absent
22	1	Present

1818. Government, Political and Legal system: 5.1 New Positions such as Government Officials

N	CODE	DESCRIPTION
51	.	Missing data
22	0	Absent
113	1	Present

1819. Government, Political and Legal system: 5.2 Changes or Implementation of Foreign Judicial System

N	CODE	DESCRIPTION
51	.	Missing data
43	0	Absent
92	1	Present

1820. Government, Political and Legal system: 5.3 Political Changes, Uprising, Cargo Cults

N	CODE	DESCRIPTION
51	.	Missing data
94	0	Absent
35	1	Present
6	2	2 additional items present

1821. Government, Political and Legal system: 5.4 Large Scale Projects Introduced by outside Agencies such as Dams, Cities, Land Distribution, Taxation, Roads

N	CODE	DESCRIPTION
51	.	Missing data
94	0	Absent
35	1	Present
6	2	2 additional items present

1822. Family/social Organization: 6.1 Changes in Family Structure such as Place of Birth, Bride price, Breaking up of the Family, Endogamy, Mixed-marriages, Weddings, Kinship Terminology, Separation of the Sexes

N	CODE	DESCRIPTION
51	.	Missing data
58	0	Absent
67	1	Present
0	2	2 additional items present
10	3	3 additional items present

1823. Family/social Organization: 6.2 Changes in Marriage Rituals, Weddings

N	CODE	DESCRIPTION
51	.	Missing data
60	0	Absent
69	1	Present
6	2	2 additional items present

1824. Family/social Organization: 6.3 Changes in Choice of Spouse, Mixed-marriages, etc.

N	CODE	DESCRIPTION
51	.	Missing data
78	0	Absent
57	1	Present

1825. Family/social Organization: 6.4 Changes in Female Role or Status

N	CODE	DESCRIPTION
51	.	Missing data
73	0	Absent
62	1	Present

1826. Body toilet, Adornment and Dress: 7.1 Changes in Body Toilets such as Piercing, Jewelry

N	CODE	DESCRIPTION
51	.	Missing data
71	0	Absent
63	1	Present
1	2	2 additional items present

1827. Body toilet, Adornment and Dress: 7.2 Changes in Dress Customs

N	CODE	DESCRIPTION
51	.	Missing data
25	0	Absent
110	1	Present

1828. Behavior: 8.1 Introduction of Drugs such as Tobacco, Alcohol

N	CODE	DESCRIPTION
51	.	Missing data
72	0	Absent
55	1	Present
8	2	2 additional items present

1829. Behavior: 8.2 Changes in Food Processing such as Cooking Methods

N	CODE	DESCRIPTION
51	.	Missing data
51	0	Absent
84	1	Present

1830. Information and Education: 9.1. Changes in Communication and the Arts such as Telegraph, American Films, Songs, Dance

N	CODE	DESCRIPTION
51	.	Missing data
57	0	Absent
70	1	Present
8	2	2 additional items present

1831. Information and Education: 9.2 Changes in Education such as Schools, Teachers

N	CODE	DESCRIPTION
51	.	Missing data
48	0	Absent
82	1	Present
5	2	2 additional items present

1832. Information and Education: 9.3 Introduction of Contact Languages, Foreign Words, Vocabulary Distortion, Pidgin Languages

N	CODE	DESCRIPTION
51	.	Missing data
50	0	Absent
75	1	Present
10	2	2 additional items present

1833. Health: 10.1 Introduction of Foreign Medical Practices, Hospitals

N	CODE	DESCRIPTION
51	.	Missing data
68	0	Absent
61	1	Present
6	2	2 additional items present

1834. Health: 10.2 Introduction of Foreign Diseases

N	CODE	DESCRIPTION
51	.	Missing data
84	0	Absent
51	1	Present

1835. Health: 10.3 Changes in Sanitation Methods

N	CODE	DESCRIPTION
51	.	Missing data
104	0	Absent
31	1	Present

1836. Religion: 11.1 Changes in Native Religion

N	CODE	DESCRIPTION
51	.	Missing data
53	0	Absent
82	1	Present

1837. Religion: 11.2 Introduction of Foreign Religion

N	CODE	DESCRIPTION
51	.	Missing data
14	0	Absent
121	1	Present

1838. Religion: 11.3 Changes in Burial Practices or Other Rituals

N	CODE	DESCRIPTION
51	.	Missing data
51	0	Absent
67	1	Present
17	2	2 additional items present

1839. Sum of Agricultural Changes

N	CODE	DESCRIPTION
51	.	Missing data
31	0	No changes
40	1	1 item
42	2	2 items
20	3	3 items
2	4	4 items

1840. Sum of Behavior Changes

N	CODE	DESCRIPTION
51	.	Missing data
34	0	No changes
54	1	1 item
40	2	2 items
7	3	3 items

1841. Sum of Educational Changes

N	CODE	DESCRIPTION
51	.	Missing data
12	0	No changes
29	1	1 item
52	2	2 items
32	3	3 items
7	4	4 items
2	5	5 items
1	6	6 items

1842. Sum of Family Changes

N	CODE	DESCRIPTION
51	.	Missing data
19	0	No changes
31	1	1 item
26	2	2 items
34	3	3 items
17	4	4 items
4	5	5 items
4	6	6 items

1843. Sum of Governmental Changes

N	CODE	DESCRIPTION
51	.	Missing data
13	0	No changes
23	1	1 item
41	2	2 items
39	3	3 items
17	4	4 items
2	5	5 items

1844. Sum of Religious Changes

N	CODE	DESCRIPTION
51	.	Missing data
7	0	No changes
27	1	1 item
41	2	2 items
45	3	3 items
15	4	4 items

1845. Sum of Technological Changes

N	CODE	DESCRIPTION
51	.	Missing data
22	0	No changes
43	1	1 item
42	2	2 items
21	3	3 items
5	4	4 items
1	5	5 items
1	6	6 items

1846. Sum of Toilet Changes

N	CODE	DESCRIPTION
51	.	Missing data
15	0	No changes
66	1	1 item
53	2	2 items
1	3	3 items

1847. Sum of Trade Changes

N	CODE	DESCRIPTION
51	.	Missing data
10	0	No changes
33	1	1 item
45	2	2 items
37	3	3 items
10	4	4 items

1848. Sum of Transportation Changes

N	CODE	DESCRIPTION
51	.	Missing data
69	0	No changes
51	1	1 item
12	2	2 items
3	3	3 items

1849. Sum of All Changes

N	CODE	DESCRIPTION
51	.	Missing data
1	5	5 items
3	6	6 items
0	7	7 items
4	8	8 items
2	9	9 items
1	10	10 items
3	11	11 items
10	12	12 items
7	13	13 items
7	14	14 items
10	15	15 items
7	16	16 items
5	17	17 items
11	18	18 items
9	19	19 items
8	20	20 items
7	21	21 items
11	22	22 items
9	23	23 items
8	24	24 items
2	25	25 items
2	26	26 items
3	27	27 items
1	28	28 items
0	29	29 items
1	30	30 items

1	31	31 items
0	32	32 items
0	33	33 items
1	34	34 items
1	35	35 items

6. NOTES

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World Cultures CD Data Disk

The CD with this issue of *World Cultures* contains the following subdirectories:

\Modernization

This subdirectory contains the files needed to add Divale and Seda's modernization codes to the MAPTAB data base. It also includes the SPSS data file STDS84.SAV.

\North

This subdirectory contains the files pertaining to the paper on regional identity by Caulkins, Painter and Hedges.

\SCCS Manuals

This subdirectory contains a codebook manual describing all the SCCS variables up to the present volume. The manual is in two WORD files (SCCS1.DOC and SCC2.DOC and two RTF files (SCCS1.RTF and SCCS2.RTF). The WORD file SCCRbib.doc contains the focused ethnographic bibliography for the Standard Cross-Cultural Sample. Documents in this directory were prepared by William Divale.

\World Cultures Volumes 1 to 11#1

This subdirectory contains each of the past volumes of World Cultures from issue 1#1 through issue 11#1. Each past issue is in its own subdirectory. **A note of warning.** In the early issues of World Cultures some Standard Cross-Cultural Sample data files were published with errors. The reader should not use the data files for the Standard Sample or the *Ethnographic Atlas* from these early issues. Corrected versions of these files were published in later issues of World Cultures. Issue 10#1 contains corrected SPSS data file of all Standard Sample variables from STDS01.sav to STDS83.sav as well as corrected files for the *Ethnographic Atlas*.

WC11#2.DOC

This file is the current issue of the journal in Word 2000 format.

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