### Introduction

The Social Factors coding scheme uses 38 variables<sup>1</sup> of subsistence strategy, kinship, gender complementarity, political structure, and other socio-cultural features derived from George Murdock's Ethnographic Atlas codes. Its purpose was to describe, in broad strokes, the approach taken by a particular society to the universal challenges of survival, social coherence, and growth, and to compare these socio-cultural factors to cross-cultural data on song, dance, conversation, and instrumentation. The Ethnographic Atlas is a dataset of over 1,200 globally distributed societies, coded for over one hundred socio-cultural variables based on a thorough review of bibliographic source material. Originally published in 29 installments of *Ethnology* between 1962 and 1967, the Atlas was the most comprehensive and systematically organized volume of cross-cultural data at the time of its publication; it has since been revised and amended several times, notably by Patrick Gray (1999). In its various iterations, the Atlas has served as the basis for hundreds of papers in cross-cultural analysis, and its data is now accessible online through the Database of Places, Language, Culture, and Environment (D-PLACE).<sup>2</sup>

The Ethnographic Atlas is part of the larger scope of Murdock's work dedicated to sampling, compiling, organizing, and annotating documentation of the world's cultures in order to facilitate cross-cultural research. In 1935, under the direction of Murdock and Mark A. May, the director of Yale University's Institute of Human Relations, a group of researchers designed a system of organizing ethnographic information across a broad range of societies--the Cross-Cultural Survey--which ultimately became the Human Relations Area Files (HRAF). HRAF was formally incorporated as a cooperative inter-university research consortium in 1949, and documents from its meticulously indexed ethnographic collections were used as sources in Murdock's important datasets, including the World Ethnographic Sample (1957), which contained 565 societies coded for 30 variables, the Ethnographic Atlas, and the Standard Cross-Cultural Sample (1969), a carefully selected set of 186 well-documented societies that today are coded for two thousand variables.<sup>3</sup>

<sup>&</sup>lt;sup>1</sup> The original study (ca. 1960s) named 36 variables. Two additional variables have been added for this publication (Climatic Zone and Altitude).

<sup>&</sup>lt;sup>2</sup> https://d-place.org/contributions/EA

<sup>&</sup>lt;sup>3</sup> Under the direction of Melvin and Carol Ember, HRAF's entire collection has been made available online at <u>https://ehrafworldcultures.yale.edu/ehrafe/</u>, along with teaching resources, courses in cross-cultural

In 1963, Alan Lomax and Conrad Arensberg began using the Atlas data, along with other sources of cross-cultural information, to identify socio-cultural patterns in comparison with the patterns of song style that Lomax's Cantometrics codings revealed. A look into the archives of Lomax's research projects suggests that the formulation of a socio-cultural coding scheme against which to measure the results of his song and performance style research took several iterations. Early approaches in collaboration with Robert Textor included not only a selection of Murdock's variables, but also data from studies of leisure time by Rolf Meyersohn, work teams by Stanley Udy, nutrition by Marjorie Whiting, and child rearing by Herbert Barry III, Margaret K. Bacon, Irvin Child and John Whiting. These became the basis for several sub-studies, in which their findings were tested against musical variables.

The system that was fleshed out most thoroughly, and used to draw many correlations between socio-cultural traits and elements of performance style, was a 36-variable adaptation of Murdock's Ethnographic Atlas, referred to in archival documents as the "Atlas" study, which we have renamed Social Factors to distinguish it from Murdock's study. While the Social Factors variables are based on a subset of Murdock's, their scale points were thoughtfully restructured, tested, and tweaked where necessary to most meaningfully account for the important cross-cultural variations that Cantometrics and the other expressive style studies revealed. In this present publication, two new variables have been added to the original study to account for climatic zone and altitude.

In addition to the changes made to the Atlas codes themselves, Lomax's research team added 53 new societies to the coded sample. Ethnographic source material for these additional societies was compiled and reviewed by Barbara Ayres,<sup>4</sup> who also coded the data for some societies based on these sources. Other codings were provided by the ethnographers themselves, or by Murdock, with whom Lomax was in regular correspondence regarding the details of this project. The Global Jukebox team has since added over 550 societies that have yet to be coded for Social Factors.

<sup>4</sup> Bibliography of non-Atlas societies available at

research methodology, a database of cross-cultural research findings, and a collection of archaeological source materials to supplement the ethnographic documents.

<sup>&</sup>lt;u>https://github.com/theglobaljukebox/socialfactors/blob/main/raw/sources.csv</u>. Note: where the name of an ethnographer but no specific textual source is listed, it is assumed that the ethnographers themselves provided codes based on their knowledge of the society.

The socio-cultural data compiled in the Social Factors set was used in analyzing the results of each of Lomax's cross-cultural expressive style studies--Cantometrics (song), Choreometrics (movement/dance), Parlametrics (speech), Phonotactics (vowel articulation in song), Minutage (breath articulation in song), and Instruments & Ensembles--in order to identify correlations between societies' distinctive structural conditions and the styles of expression that tend to accompany them. Summarized descriptions of the specific findings for each of the expressive style studies can be found in *Songs of Earth: Aesthetic and Social Codes in Music* (Wood 2021). Just a few examples of the many compelling and well-tested correlations between Cantometrics variables and social factors include:

- Solo and leader-predominating singing is more common:
  - In northern latitudes
  - In hunting, fishing and pastoralist economies where plow agriculture was adopted, and in which males tend to control the main productive systems.

Group oriented performance without prominent leaders is more frequent:

- In warmer latitudes.
- In gardening and horticultural economies where females are prominent in the productive system.
- **Rhythmic coordination of singing** correlates with relative **solidarity** in social groups, without the splitting effect of much stratification.
- Nasal singing is common in complex societies that place severe restrictions on premarital sex.

The implications of these and many other findings were written about extensively by Lomax from the 1960s through the 1980s. Although they were hotly contested by many ethnomusicologists and folklorists, most were not actually tested and therefore continue to present a ripe subject for further research. The release of the Social Factors and expressive style data and coding instructions on the Global Jukebox website and on D-PLACE will give researchers the opportunity to assess the original investigators' methods and findings on a granular level, in a similar manner as D-PLACE already provides with the Ethnographic Atlas data and other cross-cultural datasets. We are collaborating with D-PLACE to make the Global Jukebox datasets compatible with their interface, as well as to automate conversions between Ethnographic Atlas and Social Factors codings. In the guide that follows, the description of each variable includes a reference to the original column in Murdock's Atlas, followed by the D-PLACE variable number in parentheses. The Social Factors codebook<sup>5</sup> provides detailed instructions on how to translate Ethnographic Atlas codes into Social Factors codes.

<sup>&</sup>lt;sup>5</sup> Available at

https://docs.google.com/spreadsheets/d/1GRGrRpfavGdcAHJLKumumtTYJ4jGV8yTVrtCsl5RwNE/edit?usp=sharing

### GUIDE TO CODING SOCIAL FACTORS

### Line 1. CLIMATIC ZONE

Code for the latitudinal range in which the society is located. 30 degrees latitude has been defined as the frost line.

- **1. 0-30**. From 30 degrees south to 30 degrees north: Tropical Zone.
- **2. 31**+. Above 30 degrees north or below 30 degrees south: Frost Zone.

## Line 2. ALTITUDE

The altitude or elevation at which a community is located affects many of its features, from the climate and ecosystem in which it is embedded, to its inhabitants' breathing rates. This parameter was not measured in the original Social Factors study, but it has been added here so that the effects of altitude in relation to other cultural data can be studied. Elevations for the societies in the Social Factors dataset were taken from the Global Multi-resolution Terrain Elevation Data 2010 dataset, which is accessible on D-PLACE.

For this variable, rather than choosing from fixed scale points, code by entering a floating point value. The elevation of the society is measured in meters above sea level.

### Line 3. SIZE OF SETTLEMENTS

Code for the average population of the communities of a society, compiled from census or other information.

- 1. Less than 50 people
- 2. 50-99 people
- 3. 100-199 people
- 4. 200-399 people
- 5. 400-1,000 people
- 6. 1,000-5,000 people

### 7. 5,000-50,000 people

### 8. Greater than 50,000 people

See Murdock Col. 31 (EA031), Mean size of local communities

### Line 4. PERMANENCE OF SETTLEMENT

Code for the stability of the main type of settlement in a society -- whether fully or partially nomadic, whether permanent and dispersed, or settled and nucleated, or complex.

- **1. Bands**. Fully nomadic groups.
- 2. Semi-nomadic. Semi-nomadic communities whose members occupy a fixed settlement for some parts of the year but primarily wander in bands. Also includes communities that regularly shift between fixed settlements throughout the year, or from which a substantial proportion of the population departs seasonally to occupy shifting camps.
- 3. Shifting. Compact communities whose location is shifted every few years.
- **4.** Hamlet. Clusters of hamlets or neighborhoods that are separated but form a more or less permanent single community.
- 5. Nucleated villages or towns. Compact and relatively permanent settlements, or neighborhoods of dispersed family homesteads.
- 6. Complex. Villages with outlying homesteads, or towns.

See Murdock Col. 30 (EA030), Settlement patterns

### Line 5. SUBSISTENCE MODE

This is a rough typology of subsistence, that is, the productive techniques societies use for extracting food from the environment. From earliest times, humans extracted or collected their food and shelter directly from their surroundings by gathering, hunting, or fishing (Collectors (C) & Game Producers (GP)). In early or emerging food production (IP), people had small domesticated animals (such as chicken or goats, for example) or no animals, and standard tools for cultivation. Here women played a primary role in the production of food. In Animal Husbandry (Cultivators with Animals (CA) & Complex Pastoralists (CP)), farmers had specialized tools and large grass eating animals to aid them in converting vegetable products into food. The

plough, which first appeared in Mesopotamia around 5,000 BCE, allowed farmers to cultivate the soil more intensively and extensively, eventually planting vast fields that were tended by slave labor and peonage (Plough Agriculture (PA)). In regions where water supplies were unevenly distributed or scarce, water had to be distributed evenly and efficiently over the fields through irrigation (IR), allowing more crops to be grown per year on the same soil, and often centralizing the distribution of water and food crops.

- 1. C (Collectors). Collecting outweighs game producing and agriculture.
- 2. GP (Game Producers). Hunting and/or fishing outweigh collecting and/or agriculture.
- **3.** IP (Incipient Producers). Planters (prior to European contact) with simple tools and no large domestic animals.
- **4.** CA (Cultivators with animals). Cultivators with simple tools and animal husbandry (goats, sheep, horses, deer, camels, yaks, water buffalo, or cattle).
- 5. CP (Complex Pastoralists). Full nomadic pastoralism, at least 70% dependent on animal husbandry.
- **6. HF** (**Horticulturists with fishing**). Horticulture with fishing, tree cultivation, animal husbandry, and ocean fishing.
- 7. PA. Plough agriculture.
- 8. IR. Irrigators.

See Murdock Col. 7 (EA001-005), Subsistence economy; Col. 28 (EA028), Agriculture: intensity; Col. 39 (EA039-040), Domestic animals

### Line 6. COLLECTING

Code for the society's degree of dependence on collecting as its main food source -- this includes gathering wild plants, seeds, roots, and small land fauna.

- 1. Greater than 45%
- 2. 26-45%
- 3. 16-25%
- **4. 6-15%**
- 5. 5% or less

See Murdock Col. 7 (EA001), Subsistence economy: gathering.

#### Line 7. HUNTING

Code for the society's degree of dependence on hunting as its main food source -- this includes trapping and fowling.

- 1. Greater than 45%
- 2. 26-45%
- 3. 16-25%
- **4. 6-15%**
- 5. 5% or less

See Murdock Col. 7 (EA002), Subsistence economy: hunting.

#### Line 8. FISHING

Code for the society's degree of dependence on fishing as its main food resource -- here fishing includes shell fishing and catching large aquatic mammals such as seals and whales.

- 1. Greater than 45%
- 2. 26-45%
- 3. 16-25%
- **4. 6-15%**
- 5. 5% or less

See Murdock Col. 7 (EA003), Subsistence economy: fishing.

### Line 9. ANIMAL HUSBANDRY

Code for the degree to which a society is dependent for subsistence on animal husbandry (meat, milk, leather, wool, hair, and other animal products).

- 1. 5% or less
- 2. 6-25%
- 3. 26-45%
- 4. 46% or greater

See Murdock Col. 7 (EA004), Subsistence economy: animal husbandry.

## Line 10. INTENSITY OF AGRICULTURE

Code for the style of agriculture implemented in the society.

- **1. Absent**. No agriculture.
- **2. Casual agriculture**. The slight or sporadic cultivation of food or other plants incidental to a primary dependence upon extracting activities.
- 3. Extensive agriculture. Cultivation is moved to new fields every year or so.
- **4.** Horticulture. Semi-permanent vegetable plots or orchards are the main form of cultivation, rather than field crops.
- 5. Intensive agriculture. Fertilization and crop rotation on permanent fields.
- **6.** Irrigation. Intensive cultivation where the land is irrigated.

See Murdock Col. 28 (EA028), Agriculture: intensity.

### Line 11. AGRICULTURAL PRODUCT

Code whether the main crops of a society are in the form of roots/vegetables, fruits, or grains.

- 1. Roots/Vegetables. Roots or tubers, e.g., manioc, potatoes, taro, or yams. Vegetables, e.g., cucurbits, greens, or legumes.
- 2. Fruits. Tree fruits, e.g., bananas, breadfruit, coconuts, or dates.
- 3. Grains. Cereal grains, e.g., maize, millet, rice, or wheat.

See Murdock Col. 28 (EA029), Agriculture: major crop type.

#### Line 12. SIZE OF ANIMALS

Code for the principal form of domesticated animals in the society.

- 1. Pigs. Code only when they are the only domestic animal that is important.
- 2. Sheep (and/or Goats). Code only when they are the main type.
- **3.** Others. Relatively large domestic animals such as cattle, yaks, water buffalo, camels, deer, horses, donkeys.

See Murdock Col. 39 (EA040), Domestic animals: type.

#### Line 13. MILKING

Code for the presence of milking in the above categories of domestic animals. Pigs, of course, are not milked. Sheep and goats are systematically milked in many societies. In Asia, horses and deer are often systematically milked. Cattle, camels, and yaks are usually milked where they are present.

- 1. Absence. No milking.
- 2. Sheep/goats and deer.
- **3.** Others. Camelids (e.g. camels, llamas, alpacas), equine animals (e.g. horses, donkeys), and bovine animals (e.g. cattle, mithun, water buffaloes, yaks).

See Murdock Col. 39 (EA041), Domestic animals: milking.

#### Line 14. METAL WORKING

Code for the presence or absence of metal working in a society.

#### 1. Absence

2. Presence

See Murdock Col. 42 (EA044), Sex differences: metal working [see code 9 - activity absent vs all other codes].

### Line 15. GENDER COMPLEMENTARITY: MAIN SUBSISTENCE ACTIVITY

This line serves as an index for the proportional contribution of men and women to the food producing activities on which most societies depended in the past. Since child rearing and domestic activity have been prime feminine responsibilities, men often have the major role in food production. However, in gathering and planting societies, the feminine food producing role is often equal to or even greater than that of men-- complementary to it. Such publically productive labor brings social credit with it. Arensberg suggested that where women's labor produced 50% or more of the food, their participation in and effect upon other aspects of the public sector such as performing songs would also be evident (Lomax 1968:163).

First, refer to Line 5, Subsistence Mode, to determine the primary food producing activity of the society-- gathering, hunting, fishing, animal husbandry, or agriculture. Note that if the society has been coded 2 (Game Producers), you will need to further determine whether they are hunters or fishers. In societies coded 3 (Incipient Producers), 4 (Cultivators with animals), 6 (Horticulturists with fishing), 7 (Plough agriculture) or 8 (Irrigators), agriculture is considered the main food producing activity.

Then, code for the category that best describes the proportional contributions of women and men in the execution of the main food producing activity.

- **1. Females more or alone (Complementarity**). Either women alone perform the activity, or perform appreciably more than men.
- 2. Equal participation (Complementarity). Equal participation by both genders.
- **3.** Males more or alone (Non-Complementarity). Either men alone perform the activity, or perform appreciably more than women.

See Murdock Col. 54, 56, 58, 60, and 62 (EA050-054), Sex differences: gathering/hunting/fishing/animal husbandry/agriculture.

### Line 16. GENDER COMPLEMENTARITY: ALL SUBSISTENCE ACTIVITIES

To provide a second way of measuring gender complementarity in food production, this line considers the proportional contributions of men and women across all of the subsistence activities present in the society, not just the primary one.

To code, first calculate a weighted average of the appropriate codes for Murdock's five variables measuring sex differences in gathering, hunting, fishing, animal husbandry, and agriculture (EA050-054). Use the following weighting system:

Murdock Code Name	Murdock Code Description	Murdock Code (D-PLACE)	Weight
Males alone (M)	Males alone perform the activity, female participation being negligible.	1	0 or 0%
Both, males more (N)	Both sexes participate, but males do appreciably more than females.	2	1 or 25%
Differentiated but equal (D)	Differentiation of specific tasks by sex but approximately equal participation by both sexes in the total activity.	3	2 or 50%
Equal participation (E)	Equal participation by both sexes without marked or reported differentiation in specific tasks.	4	2 or 50%
Both, females more (G)	Both sexes participate, but females do appreciably more than males.	5	3 or 75%
Females alone (F)	Females alone perform the activity, male participation being negligible.	6	4 or 100%

### Table 1. Weighting system for gender complementarity variables

Once a weighted average has been calculated, compare it to the world average to determine whether the society scores higher or lower than average for gender complementarity in food production. Therefore, the Social Factors data codes whether the weighted average for each society, as calculated above, is higher or lower than this value.<sup>6</sup>

- **1. Complementary.** Women participate in food producing activities at a higher rate than the world average.
- **2. Non-Complementary.** Women participate in food producing activities at a lower rate than the world average.

See Murdock Col. 54, 56, 58, 60, and 62 (EA050-054), Sex differences: gathering/hunting/fishing/animal husbandry/agriculture.

# Line 17. GENDER COMPLEMENTARITY: CRAFTS

Using the same method as described in Line 16 above, this line considers the proportion of the work done by men and women across six craft activities. This provides a second way of bringing the effect of the gendered division of labor into this scheme of social comparison.

To code, first calculate a weighted average of the appropriate codes for Murdock's six variables measuring sex differences in metal working, weaving, leather working, pottery, boat building, and house construction (EA044-049). Use the same weighting system as shown in Table 1.

Once a weighted average has been calculated, compare it to the world average to determine whether the society scores higher or lower than average for gender complementarity in crafts. Therefore, the Social Factors data codes whether the weighted average for each society, as calculated above, is higher or lower than this value.

- **1. Complementary.** Women participate in craft activities at a higher rate than the world average.
- 2. Non-Complementary. Women participate in craft activities at a lower rate than the world average.

<sup>&</sup>lt;sup>6</sup> If adding new societies to the sample, the world average will need to be recalibrated to include these societies, and so the criteria for coding a society as complementary or non complementary will change. This applies to Lines 16 through 18.

See Murdock Col. 42, 44, 46, 48, 50, and 52 (EA044-049), Sex differences: metal working/weaving/leather working/pottery making/boat building/house construction.

#### Line 18. GENDER DIFFERENTIATION

This line provides information about whether men and women generally share the eleven subsistence and craft activities described in Lines 16 and 17 above, or if they perform all or most of these tasks in the company of their own gender. The same eleven variables from the Ethnographic Atlas (EA044-054) are used to generate a weighted average, which is once again compared to the world average. This time, however, the scale points are weighted according to their degree of differentiation-- the degree to which work is performed by gender separate groups. Use the following weighting system to calculate a weighted average across Murdock variables EA044-EA054:

Murdock Code Name	Murdock Code Description	Murdock Code (D-PLACE)	Weight
Equal participation (E)	Equal participation by both sexes without marked or reported differentiation in specific tasks	4	0 or 0%
Both, females more (G)	Both sexes participate, but females do appreciably more than males	5	1 or 33%
Both, males more (N)	Both sexes participate, but males do appreciably more than females	2	1 or 33%
Differentiated but equal (D)	Differentiation of specific tasks by sex but approximately equal participation by both sexes in the total activity	3	2 or 67%
Males alone (M)	Males alone perform the activity, female participation being negligible	1	3 or 100%
Females alone (F)	Females alone perform the activity, male participation being negligible	6	3 or 100%

Table 2. Weighting system for gender differentiation variable.

Once a weighted average has been calculated, compare it to the world average to determine whether the society scores higher or lower than average for gender differentiation. Therefore, the Social Factors data codes whether the weighted average for each society, as calculated above, is higher or lower than this value.

- **1. Differentiation.** Craft and subsistence activities are performed by gender-separated groups at a higher rate than the world average.
- 2. No Differentiation. Craft and subsistence activities are performed by gender-separated groups at a lower rate than the world average.

See Murdock Col. 42-62 (EA044-054), Sex differences.

# Line 19. SEGREGATION OF ADOLESCENT BOYS

Code for whether adolescent boys are separated from the family, perhaps as part of an initiation rite.

- **1. Segregation**. Adolescent boys are isolated from nuclear family as a part of initiation.
- **2. Contact**. There is some familial contact during this adolescence.

See Murdock Col. 38 (EA038), Segregation of adolescent boys.

## Line 20. PREMARITAL SEX NORMS FOR FEMALES

Code for the extent to which female premarital sexual activity is allowed or prohibited.

- **1. Allowed**. Premarital sex is allowed, such as for trial marriage.
- 2. Weak Prohibition. Premarital sex is weakly prohibited through social sanctions of some sort.
- **3. Prohibited (or prevented).** Virginity demanded for marriage, or precluded by early marriage of females.

See Murdock Col. 78 (EA078), Norms of premarital sexual behavior of girls.

### Line 21. MEANS OF MARRIAGE

This line scales the cost of marriage: whether it involves a large payment in labor or goods, and whether it falls on the shoulders of the groom and his family or to the lot of the bride's family.

- **1. Exchange.** A transfer of a female relative of the groom in exchange for the bride.
- **2. Bride-Price.** A substantial payment of livestock, goods, money, or labor from the groom's family in exchange for the bride.
- 3. Gift. Reciprocal exchange of substantial gifts between the two families.
- **4.** Token. A small or symbolic payment from the groom's family.
- **5. Dowry.** A substantial payment from the bride's family to the bride, the groom, or the groom's kinsmen.

See Murdock Col. 12 (EA006), Transactions at marriage: prevailing type.

### Line 22. TYPE OF POLYGYNY

This scale notes the presence or absence of polygyny (more than one wife in a family), and the degree to which the type of polygyny emphasizes the separation of the wives.

- 1. **Polygyny Separate**. Each wife occupies a separate dwelling.
- 2. Polygyny Together. All the wives live together.
- **3. Polygyny Nuclear**. Small families with occasional polygyny.
- 4. Monogamy. No polygyny.
- 5. **Polyandry**. More than one husband in the family.

See Murdock Col. 14 (EA008-009), Domestic organization and Marital composition: monogamy and polygamy.

### Line 23. FAMILY SIZE

Code for the category that represents the typical size of families that dwell together in the society.

- 1. Extended. Containing several related families under the same roof.
- **2. Stem**. Consisting of only two related families.
- **3. Independent Nuclear**. Single families, whether monogamous, polygynous or polyandrous.

See Murdock Col. 14 (EA008), Domestic organization.

# Line 24. MARITAL RESIDENCE

Code whether, after marriage, the couple resides with the bride's family, with parents of either side or with neither, or with the groom's family.

- **1. Bride.** Couples reside with the bride's family. Duolocal or natolocal residence (where the bride and groom remain in their natal households) is also coded here.
- 2. Either/Neither. Couples reside with either side of the family, or with neither.
- **3. Groom.** Couples reside with the groom's family.

See Murdock Col. 16 (EA012), Marital residence with kin: prevailing pattern.

### Line 25. LINEAGES

Code for the mode in which descent is reckoned, whether matrilineal, cognatic, or patrilineal.

- 1. Matrilineal. Descent and kinship is calculated via the maternal or female line.
- **2.** Cognatic. In this familial type, common in the USA, descent is calculated in terms of both sides of the family.
- **3. Patrilineal.** Descent and kinship is calculated via the paternal or male line.

See Murdock Col. 20 (EA017), Largest patrilineal kin group; Col. 22 (EA019), Largest matrilineal kin group; Col. 24 (EA021), Cognatic kin groups; and EA043 (created by Gray (1999), derived from but not in Murdock), Descent: major type.

## Line 26. UNILATERAL/BILATERAL

In unilateral families (that is matrilineal or patrilineal), descent is calculated and individuals expect help from one side of the family, either the mother's or the father's. In bilateral (cognatic) families, family descent is calculated and aid may be sought from both the mother's and father's side of the family

- **1. Unilateral.** Descent is calculated based on one side of the family (matrilineal or patrilineal).
- 2. Bilateral. Descent is calculated in terms of both sides of the family (cognatic).

See Murdock Col. 20 (EA017), Largest patrilineal kin group; Col. 22 (EA019), Largest matrilineal kin group; Col. 24 (EA021), Cognatic kin groups; and EA043 (created by Gray (1999), derived from but not in Murdock), Descent: major type.

## Line 27. LAND OWNERSHIP

Code for the presence or absence of land ownership.

## 1. Absence

2. Presence

See Murdock Col. 74 (EA074), Inheritance rule for real property (land).

# Line 28. INHERITANCE OF REAL PROPERTY

Code whether land is inherited by matrilineal heirs, patrilineal heirs, or either/both -- these rules exclusive of the dower rights of the widow.

- 1. Matrilineal heirs. Matrilineal inheritance by daughters, sister's sons, or other matrilineal heirs.
- 2. Either. Inheritance by children of either sex or both, even if the inheritance is unequally distributed between the sexes. Also code for the absence of individual property rights or rules of inheritance of real property.
- **3.** Patrilineal heirs. Patrilineal inheritance by sons or other patrilineal heirs.

See Murdock Col. 74 (EA074), Inheritance rule for real property (land).

# Line 29. INHERITANCE OF MOVEABLE PROPERTY

Code whether moveable property is inherited by matrilineal heirs, patrilineal heirs, or either/both -- these rules exclusive of the dower rights of the widow.

- 1. Matrilineal heirs. Matrilineal inheritance by daughters, sister's sons, or other matrilineal heirs.
- 2. Either. Inheritance by children of either sex or both, even if the inheritance is unequally distributed between the sexes. Also code for the absence of individual rights to moveable property or rules of inheritance of moveable property.
- **3.** Patrilineal heirs. Patrilineal inheritance by sons or other patrilineal heirs.

See Murdock Col. 76 (EA076), Inheritance rule for movable property.

## Line 30. KIN SOLIDARITY

Code for the category that best describes the organization of marriage in the society and the presence or absence of localized kin groups. Exogamy refers to marriage outside of one's own social group, whereas endogamy refers to marriage within the group.

1. Segregated Clan. Segmented communities (i.e., those divided into barrios, wards, or hamlets, each of which is essentially a localized kin group, a clan or ramage) or single clan communities (each consisting essentially of a single localized exogamous kin group or clan.)

- 2. Demes. Communities revealing a marked tendency toward local endogamy but not segmented into clan-barrios.
- **3.** Non-Solidary. Without local clans or kin-oriented marriage rules, which support cohesive or solidary organization.

See Murdock Col. 19 (EA015), Community marriage organization.

## Line 31. KINSHIP SYSTEM

A measure of the degree of structure in the kinship system based on the extent to which names for cousins distinguish cousin subtypes and/or among other groups of kin. In the Ethnographic Atlas, Murdock defined seven different cultural models of kin terminology for cousins:

**Crow**, i.e., FaSiCh equated with Fa or FaSi and/or MoBrCh with Ch or BrCh(ws) **Descriptive** or derivative, rather than elementary, terms employed for all cousins **Eskimo**, i.e., FaBrCh, FaSiCh, MoBrCh, and MoSiCh equated with each other but differentiated from siblings

Hawaiian, i.e., all cousins equated with siblings or called by terms clearly derivative from those for siblings

**Iroquois**, i.e., FaSiCh equated with MoBrCh but differentiated from both siblings and parallel cousins

**Omaha**, i.e., MoBrCh equated with MoBr or Mo and/or FaSiCh with SiCh(ms) or Ch **Sudanese**,<sup>7</sup> i.e., FaSiCh and MoBrCh distinguished alike from siblings, parallel cousins, and each other but without conforming to either the Crow, the descriptive, or the Omaha patterns

- **1. Structured kinship system.** Following the Crow or Omaha models of kin terms for cousins described by Murdock.
- 2. Moderately structured kinship system. Following the Hawaiian or Iroquois models of kin terms for cousins described by Murdock.
- **3.** Loosely structured kinship system. Following the descriptive or Eskimo models of kin terms for cousins described by Murdock.

<sup>&</sup>lt;sup>7</sup> The Sudanese model is not accounted for in the Social Factors coding instructions.

See Murdock Col. 27 (EA027), Kin terms for cousins.

### Line 32. COMMUNITY SOLIDARITY

A measure of the relative solidarity of the local community. It aims to distinguish groupy, clubby, cohesive communities from those that are more individualized and more loosely organized—the contrast, say, between an African village and a Western ranching neighborhood. The scale combines several Murdock indicators of stable community and kin structures, shown in the table below.

Ethnographic Atlas Criteria	Social Factors Code
<ul> <li>Society must meet <u>all four</u> of the following criteria:</li> <li>Col. 67 (EA066), Class differentiation: primary is NOT coded for Complex Stratification (C) or Elite Stratification (E), and,</li> <li>Col. 69 (EA068), Caste differentiation: primary is NOT coded for Complex Stratification (C) or Ethnic Stratification (E), and,</li> <li>Col. 32 (EA033), Jurisdictional hierarchy beyond local community is coded &lt;4 (Less than three hierarchical levels), and,</li> <li>Col. 30 (EA030), Settlement patterns is NOT coded for Bands (B) or Semi-Nomadic (S)</li> </ul>	Solidary
<ul> <li>As well as <u>any</u> of the following criteria:</li> <li>Either Col. 20 (EA017), Largest patrilineal kin group or Col. 22 (EA019), Largest matrilineal kin group has a code other than None, <i>or</i>,</li> <li>Col. 24 (EA021), Cognatic kin groups is coded for Ramages (R) or Exogamous Ramages (S), <i>or</i></li> <li>Col. 19 (EA015), Community marriage organization is coded for Clans (C)</li> </ul>	
All other societies	Non-Solidary

#### Table 3. Criteria for community solidarity variable

Code based on the criteria established in Table 3 above.

**1. Solidary.** Class is not differentiated in terms of an elite resource-controlling class or by a complex stratification system based on occupational status; caste is not differentiated by

ethnicity or by a complex stratification system based on occupational status; there are less than three levels of jurisdictional hierarchy beyond the local community; and the community is not nomadic or semi-nomadic. In addition, either descent is calculated unilaterally, or the society is organized into ramages (ancestor-oriented ambilineal kin groups) or clan communities.

2. Non-solidary. Society does not meet the established criteria for solidarity.

See Murdock Col. 19 (EA015), Community marriage organization; Col. 20 (EA017), Largest patrilineal kin group; Col. 22 (EA019), Largest matrilineal kin group; Col. 24 (EA021), Cognatic kin groups; Col. 30 (EA030), Settlement patterns; Col. 32 (EA033), Jurisdictional hierarchy beyond local community; Col. 67 (EA066), Class differentiation: primary; Col. 69 (EA068), Caste differentiation: primary.

# Line 33. SOCIAL LAYERING

An additive score of the social strata in a community, calculated from the Murdock codings for class, caste, and slavery. Numerical values were assigned to the codes of these three Murdock variables as shown in Table 4 below, and the sum of these values equals the society's social layering score.

Murdock Col.	D-PLACE VarID	Murdock Variable Name	Murdock Code Name(s)	Score
			Wealth Distinctions (W)	1
			Dual Stratification (D)	2
			Elite Stratification (E) or Complex	
67	EA066	Class Differentiation	Stratification (C)	3
			Despised occupation groups (D)	1
			Ethnic Stratification (E) or Complex	
69	EA068	Caste Differentiation	Caste Stratification (C)	2
			Any form of slavery, hereditary or	
71	EA070	Slavery	non-hereditary (H, S, or I)	1

Table 4. Social	lavering	score	chart
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Add up the appropriate scores from each of these Murdock variables to determine the social layering score, and code for that score using the following categories.

- 1. None. No slavery, class, or caste distinctions (social layering score of 0).
- **2. One.** Social layering score of 1.
- **3. Two.** Social layering score of 2.
- **4. Mid.** Social layering score of 3-4.
- 5. High. Social layering score of 5-6.

See Murdock Col. 67 (EA066), Class differentiation: primary; Col. 69 (EA068), Caste differentiation: primary; Col. 71 (EA070), Slavery: type.

## Line 34. PRESENCE OF STATES

Code for whether the society is governed by a state, or whether the society is stateless. If a state system exists, indicate whether the state(s) are large or small.

- 0. Absent
- 1. Small
- 2. Large

See Murdock's 1957 World Ethnographic Sample (EA090), Political integration.

## Line 35. EXTRA-LOCAL JURISDICTIONAL HIERARCHIES

Code for the number of non-local levels of political authority that govern a community. For example, modern local communities in the United States normally have three levels of extra-local jurisdictional hierarchies — the county, the state, and the national. This is, in effect, a measure of the centralization of government.

- 1. Zero. No political authority beyond community (e.g., autonomous bands and villages).
- 2. One. One level (e.g., petty chiefdoms).
- **3. Two.** Two levels (e.g., larger chiefdoms).

- **4.** Three. Three levels (e.g., states).
- **5.** Four. Four levels (e.g., large states).

See Murdock Col. 32 (EA033), Jurisdictional hierarchy beyond local community.

### Line 36. POLITICAL SUCCESSION

The following types of succession to the office of local headman (without reference to high levels of political organization) can be coded:

- 1. Absent. Absence of headman.
- 2. Consensus. Election or other formal mode of choosing a headman.
- 3. Seniority. One of the senior members of the community is chosen.
- 4. Hereditary. Any system, where succession is hereditary.
- 5. Informal. The choice is informal, based on riches, social standing or the like.
- 6. Other Non-Hereditary. Any other non-hereditary system not described by one of the other categories.

See Murdock Col. 73 (EA072), Political succession.

### Line 37. HIGH GODS

Code for the society's religious beliefs about high gods.

- **1. Absent**. A group with no belief in a high god (instead a belief in spirits, in nature, in animal helpers or ancestors).
- 2. Otiose. A high god is believed to exist, but is not concerned with human affairs.
- **3.** No Involvement. Such a God exists and is active in human affairs, but does not offer positive support to human morality.
- **4. Involved**. Such a God exists, and is involved with human morality.

See Murdock Col. 34 (EA034), Religion: high gods.

#### Line 38. TYPES OF GAMES

This scale distinguishes between societies that have no games, those that have games of physical skill alone, those that have both games of physical skill and chance, and those that, in addition, have games of strategy (e.g. checkers). While derived from the Ethnographic Atlas, this scale is originally based on Roberts' et al (1959) cross-cultural study of games, and follows both Roberts and Murdock in only considering games with an outcome (i.e. a winner and loser).

- 1. Absent. No games in the society.
- 2. Physical-or-Chance. The society has either games of physical skill only (which may involve incidental elements of chance or strategy), e.g. foot racing, wrestling, the hoop-and-pole game, or games of chance only (no significant element of physical skill or strategy involved), e.g. dice games.
- **3. Physical-and-Chance.** Both games of physical skill and games of chance are present in the society.
- **4. Others.** Other types of games are present in the society, including games of strategy, which may also include elements of physical skill and/or chance.

See Murdock Col. 35 (EA035), Games.

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