

## **Appendix A: ETHNOGRAPHIC DATA FOR AGRICULTURAL SOCIETIES:**

### **MY CODES**

**A1. Name of society.** From Murdock and White (1969).

**A2. Number of society in the Standard Cross-Cultural Sample.** From Murdock and White (1969).

**A3. Economic system.** These evaluations are derived from the cluster analysis. 1 = herding plus economic system; 2 = egalitarian farming economic system; 3 = individualistic farming economic system; 4 = semi-marketized farming economic system. An 'A' in column A3b indicates that in the ten runs of the cluster program, the particular society ended up in the designated cluster at least 80 percent of the times; a 'B' indicates 70 percent or more of the runs; a 'C' indicates that the program placed the society in a particular cluster 60 percent of the time. In this case I have placed the society in the particular cluster where it was most often found, but have not included it in the regression calculations determining the characteristics of the cluster. If the systems variable is not provided, it means that it did not end up in any cluster more than 50 percent of the cluster runs.

**A4. Communal or private ownership of fields.** 0 = No ownership or individual use rights recognized; 1=communal fields, individual use rights not recognized; 2 = communal fields, individual use rights recognized; 3 = fields owned by large family unit (clan, gens, sib), use rights assigned to individuals; 4 = fields owned by individuals or small family unit.

**A5. Individual use rights to fields, bounded or absolute.** 0 = no use rights over land recognized; 1 = land communally held or held by large kin groups, and use directed by headman or kin-group head; 2 = land rights held by individual or small family unit, but community or large kin group can regulate sale or intervene in other ways; 3 = land rights held by individual or

small family unit, and neither community nor large kin group intervenes.

**A6. Individual ownership of unfarmed but usable (“empty”) lands.** 0 = empty lands open to all; 1 = empty lands and meadows held by community or large kin group; directed by leaders of community or kin group, and individual rights assigned when needed. 2 = empty lands held and controlled by individuals or small family unit.

**A7. Rate of land rents.** 1 = no rents; 2 = middle range rents (e.g. up to 25% of crop;) 3 = rents between 25 and 50 % of crop; 4 = rents > 50% of crop.

**A8. Tenancy.** 1= use rights or ownership almost always by actual farmer or herder; 2 = some lands rented; 3 = most lands rented; 4 = most land farmed by hired or unfree laborers (considered as a form of tenancy).

**A9. Mutual aid in farming or herding.** 0 = farming done usually by individuals or small family groups with little outside help from friends, neighbors, or relatives; 1 = considerable mutual aid or labor exchanges.

**A10. Work-coordination.** 0 = each individual farmer or herder works on own schedule; 1 = farming or herding activities coordinated to a certain degree because of the exigencies of irrigation or grazing; 2 = extensive coordination of agricultural activities of individual farmers or herders.

**A11. Unfree labor in the last two centuries.** Some serious conceptual problems arise in the coding of this variable. The features of unfree labor varied along a spectrum, and a line between free and unfree is difficult to draw. For instance, until close to the end of the 19<sup>th</sup> century in England, both rural and urban workers in many occupations were not free to leave their positions without the employer’s permission and faced prosecution if they tried (Steinfeld, 2001). Generally, however, historians do not consider such workers as slaves, serfs, or even

“unfree.” Moreover, the conditions of slavery differed considerably among societies. In some societies, slaves were chattel, who could be bought and sold and who required approval of their owners for most of their important life choices (the antithesis of “freedom”). But in certain African societies (as emphasized by Miers and Kopytoff, 1977), the kin group “owned” many rights in a person. In these cases, the essence of slavery was not a loss of freedom, but was the act of being forcibly wrenched from one’s own kin network. This loss of “social personality” was the antithesis of belonging. Furthermore, in certain societies slaves were regularly manumitted; in others they were not. And if manumitted, in some societies they could become full citizens, as in ancient Rome (Temin, 2002), while in others they remained a semi-caste separate from both the slaves and the free population, for instance, the free Blacks in the southern U.S. states before the Civil War. In some societies slaves were ruthlessly exploited and lived at a much worse level than their owners; in other societies, they served primarily as prestige items and enjoyed a standard of living little different than their owners.

Since the sample is not large enough to make such fine distinctions, I employ a broad definition of unfree labor that embraces all these varieties of slavery. Unfree labor in the form of serfdom includes labor that was bound to the land or that could be bought and sold with the land. 1 = none; 2 = some slavery or serfdom, but not extensive; 3 = extensive use of slave or serf labor.

**A12. Unfree labor at the pinpointed date.** 1 = none; 2 = some slavery or serfdom, but not extensive; 3 = extensive use of slave or serf labor.

**A13. Inheritance by all children or primogeniture.** This variable concerns only the inheritance of land (in a cultivating society) or herds (in a herding society). 0 = no inheritance; 1 = inheritance split among all children; 2 = inheritance split among children of one sex; 3 =

inheritance primarily by one child.

**A14. Central redistribution of food.** This includes redistribution either by the headman, the “big man,” a clan leader, or a church. 1 = little such redistribution; 2 = moderate redistribution; 3 = considerable redistribution.

**A15. Trade of goods with other communities.** 1 = not important; 2 = somewhat important (roughly 5% of total production of goods); 3 = very important (more than 10% of total production of goods). (If between 5 and 10%, then = 2.5).

**A16. Intra-community trade of goods.** This variable concerns only goods made within the community and are traded with other community members. 1 = not important; 2 = some what important (roughly 5 % of total production of goods); 3 = very important (roughly 10 % or more of total production of goods).(If between 5 and 10%, then = 2.5).

**A17. Importance of wage labor outside the community.** 1 = little such activity; 2 = somewhat important (roughly 5% of the total labor supply); 3 = very important (roughly 10 %of more of the total labor supply). (If between 5 and 10%, then = 2.5).

**A18. Importance of wage labor inside the community.** 1 = little such activity. 2 = somewhat important (roughly 5%of the total labor supply); 3 = very important (roughly 10%or more of the total labor supply). (If between 5 and 10%, then = 2.5).

**A19. Interest on loans.** 1 = none; 2 = interest charged, but primarily on commercial loans (such as loans by moneylenders); 3 = interest charged on most loans, commercial or personal (except from close relatives).

**A20. Inequality of wealth.** This variable focuses only on inequality of land holdings and herds. In those cases where land distribution data were not available, I had to rely on a subjective assessment of the ethnographic materials. 1 = general equality; 2 = some differences in wealth; 3

= considerable differences in wealth.

**A21. Relative wealth of political leaders in the community.** 1 = local political leader has little more wealth than others; 2 = local political leader among the wealthiest in community.

**A22. Social inequality of free population.** 1 = general egalitarianism; 2 = social ranking important; 3 = at least two distinct classes or castes, other than slaves and royalty.

**A23. Presence of irrigation.** 0 = no irrigation; 0.5 = some use of irrigation; 1 = considerable use of irrigation.

**A24. Political centralization.** This variable is an unweighted average of my codings for five variables, each scaled from 0 (low centralization) to 4 (high centralization). These variables are: relative wealth of local political leader, power of local leader, selection of political leader, extent of local political hierarchy, and level of sovereignty

**A25. Size of community.** Persons in community: 1 = or < 50; 2 = 50-99; 3 = 100-149; 4 = 150-199; 5 = 200-249; 6 = 250-300; 7 = 300-399; 8 = 400-500; 9 > 500. For the calculation in Table 3-2 I used the midpoints of each range and, for a population >500, used 1000 in the calculation.

**A26. Capital intensity of production.** For cultivation I counted one point each for the presence of plows, irrigation, terracing, and fertilization. For herding I counted 1 point for 15 to 35% reliance on animal husbandry for food; 2 points for 35 to 65% reliance; 3 points for 65 to 85% reliance; and 4 points for 85% or more reliance. The total capital intensity was the sum of these two calculations, but truncated at 4.

**A27. Form of rent.** 0 = no rent; 1 = payment in labor; 2 = fixed payment in crops (often simply a symbolic rent); 3 = payment in a share of the crop; 4 = fixed money rent.

**A28. Presence of gambling.** 1 = little or none; 2 = some; 3 = considerable.



## **Appendix B: ETHNOGRAPHIC DATA FOR AGRICULTURAL SOCIETIES: CODES BY OTHERS**

Many of the codes are taken from World Cultures - Special CD (annual, 2001). In the explanation below, I use the letter 'V' to designate the number of the variable on this disk and, since this disk may not be generally available. I also include the original source of the coding. The number starting each paragraph of explanation designates the column in the table to which the paragraph refers. A blank space indicates that no codes were made.

**B1. Name of society.** From Murdock and White (1969).

**B2. Number of society in the Standard Cross-Cultural Sample.** From Murdock and White (1969).

**B3. Pinpointed date.** V838; originally from Murdock and White (1969).

**B4. Percentage of subsistence coming from animal husbandry.** V206, originally published by George Peter Murdock in various installments in Ethnology. Murdock apparently based his estimates on the bulk or weight of the food, rather than its nutritional content.

**B5. Percentage of subsistence coming from plant cultivation.** V206, originally published by George Peter Murdock in various installments in Ethnology. Murdock apparently based his estimates on the bulk or weight of the food, rather than its nutritional content.

**B6. Cultural complexity.** The original data come from Carneiro (1970) and these were supplemented by data supply to me by Robert Carneiro. For those societies for which such ratings were not available, I used an estimation technique described in Pryor (2003).

**B7. Precipitation.** Rainfall per year, measured in millimeters. These data come from the nearest weather station to the pinpointed society and presented by Thornthwaite and Associates

(1962-65).

**B8. Evapotranspiration.** A measure of annual water supply available for plants (i.e., precipitation after water run-off). These data come from the nearest weather station to the pinpointed society and are presented in Thornthwaite and Associates (1962-65).

**B9. Rainfall seasonality.** The ratio of potential evapotranspiration to actual evapotranspiration. These data come from the nearest weather station to the pinpointed society and are presented in Thornthwaite and Associates (1962-65). In calculating the averages for Table 4-2, I eliminated several extreme values.

**B10. Effective temperature.** V187, V188, calculated from unpublished data gathered by John Whiting. My variable employs these data and a formula based on the mean temperatures of the hottest and coldest month that is discussed by Kelly (1995, p. 66). This measure provides “a simultaneous measure of the intensity of solar radiation as well as its annual distribution.”

**B11. Elevation in meters.** These data come from the nearest weather station to the pinpointed society and are presented in Thornthwaite and Associates (1962-65).

**B12. Slope of terrain.** V822, originally estimated by Pryor (1986). The ratings run from 4 (steep) to 8 (level).

**B13. Suitability of soils for agriculture.** V824, originally estimated by Pryor (1986). The ratings run from 0 (highly unsuitable) to 8 (highly suitable).

**B14. Suitability of climate for agriculture.** V827, originally estimated by Pryor (1986). The ratings run from 0 (highly unsuitable) to 8 (highly suitable).

**B15. Famine threat.** V1265, V1267, V1683, and V1685, originally estimated by Dirks (1993) and Ember and Ember (1992). My variable is an unweighted average of these four estimates, all recoded on a four point scale. They run from 1 (low) to 4 (high).

**B16. Agricultural potential #1.** The original data come from Pryor (1986) and the index is calculated as the sum of the slope, soil and climate variables. The results run from 4 (low potential) to 24 (high).

**B17. Agricultural potential #2.** The original data come from Pryor (1986) and the index is calculated as the lowest value of the slope, soil and climate variables. The results run from 0 (low potential) to 8 (high).

**B18. Population density.** V1130, originally from Pryor (1985). 2 = .5 persons per square mile; 3 = 1.49 persons per square mile; 4 = 5 - 24.9 persons per square mile; 5 = 25 - 99.9 persons per square mile; 6 = 100 - 499.9 persons per square mile; 7 = 500 or more persons per square mile. I used the midpoints of these ranges in Table 4-2, placing 7 = 750 persons per square mile.

**B19. Frequency of internal warfare.** V1649, originally coded by Ember and Ember (1992). The scale runs from 0 to 17.

**B20. Frequency of external warfare.** V1650, originally coded by Ember and Ember (1992). The scale runs from 0 to 17.

**B21. War for land.** 0 = no or not mentioned; 1 = yes. The original data come Wheeler (1974) and are reported as V911.

**B22. Male dominance.** V670, originally coded by Sanday (1981) but not published. This is a composite variable that takes into consideration female power and male aggression, where 1 = sexes equal (5 or above on the Sanday female power scale, 4 or below on the Sanday male aggression scale); 2 = “mythical male” (5 or above on the female power scale, 5 or above on the male aggression scale); 3 = sexes unequal (4 or below on the female power scale).

**B23. Female contribution to subsistence.** V890, an average of three separate estimates

by Barry and Schlegel (1982), Whyte (1978), and the Ethnographic Atlas.

**B24. Corporate descent or lineage groups.** V70, originally coded by Murdock and Wilson (1972). 0 = no corporate descent groups; 1 = corporate descent groups (matrilineal, patrilineal, ambilineal, or double descent).

**B25. Post-marital residence.** V68, originally coded by Murdock and Wilson (1972). 1 = matrilineal or uxorilineal (with wife's kin); 2 = ambilineal (with either wife's or husband's kin) or neolocal (separate from kin); 3 = avunculocal (with husband's mother's brother's kin); 4 = patrilineal or virilineal (with husband's kin).

**B26. Marriage form.** V79, originally coded by Murdock and Wilson (1972). 1 = polyandry; 2 = monogamy, no polygyny; 3 = primarily monogamy (less than 20% of marriages polygynous); 4 = more than 20% of marriages polygynous.

**B27. Cousin marriage.** V227, originally coded by Murdock for various installments of Ethnology. 1 = marriage not allowed with first or second cousins; 2 = marriage allowed with three of four of these cousins; 3 = marriage allowed with two of four of these cousins; 4 = marriage allowed with only one of four of these cousins; 5 = no marriage allowed with first cousins (but perhaps with second cousins); 6 = no marriage allowed with first or second cousins (or at least most cousins).