Kinship, Marriage and the Family: Eight Time Series, 35000 B.C. to 2000 A.D.

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ABSTRACT

This paper presents long-range time series for eight concepts of marriage, family and kinship. Each time series is, respectively, a time series of the probability of living in a society where: 1) the ultimate sovereign group is a kinship unit; 2) the ultimate sovereign kinship group is an independent family; 3) the independent family is the predominant family form; 4) neolocal residence predominates; 5) bilateral kinship exists; 6) no consideration (or only bridal gifts) is given when obtaining a wife; 7) individuals have complete freedom to choose a spouse; and 8) where divorce occurs frequently. The method used to construct a time series of a probability that a discrete random variable X=x, x=1,2,... is conditioning on another discrete random variable Y, Y=1,2,3 which is observable both in the archaeological record and in an ethnographic cross-cultural data base. Conditional probabilities P(X=x |Y=y), x=1,2,..., y=1,2,3 are obtained from the ethnographic cross-cultural data base. Uses for such time series are outlined.

Introduction

The objective of this paper is to present time series describing the evolution from 35000 B.C. to 2000 A.D. of a set of eight basic concepts of kinship, marriage and the family. The writer hopes, in so doing, to encourage readers to engage in their own time series research.

Time Series of Kinship, Marriage and the Family

The time series which are about to be described are one substantive result of a larger methodological project (Denton, 1993a) the purpose of which was to devise a general method for constructing long-range time series of culture and society. Here is a summary of the method. Since the method is based on use of a variety of tables, what follows is only a summary. The reader wishing to see the tables on which the method is based will have to go to Denton (1993a). Let us define the individual as the unit of analysis. Although the method may be modified to enable analysis of continuous variables, we will construct time series here only of discrete variables. Define a discrete random variable X,
X=1,2,... and a conditioning discrete random variable Y, Y=1,2,3. The unconditional probability of the occurrence of the event $E_1$, where $E_1$ is, say, the occurrence of the event $X=x$, may be calculated as (Ross 1989:93-108).

$$P(X=x)=\sum_{Y}P(X=x \mid Y=y)P(Y=y)$$

(1)

We work with conditional probabilities because they are easier to obtain. The conditioning random variable Y, Y=1,2,3 must be observable in the archaeological record; it must also be observable in a suitable cross-cultural ethnographic data base. Random variable Y, Y=1,2,3 is defined as follows. The codings Y, Y=1,2,3 signify for Y=1 that the individual lives in a non-state predominantly non-food producing society, for Y=2 that the individual lives in a non-state predominantly food producing society, for Y=3 that the individual lives in a state predominantly food producing society. The probabilities $P(Y=y)$, y=1,2,3 are estimated from the archaeological record of each of 10 world regions (Denton, 1993a). The conditional probabilities $P(X=x \mid Y=y)$ are estimated from the cross-cultural data base. As a result we have most of the probabilities needed for equation (1). The $P(Y=y)$ are estimated for each region for 38 equally spaced time points 35000 B.C. to 2000 A.D., each interval being of 1,000 years. A limit of 35000 B.C. is selected so as to include the era of the modern form of our species. If estimates are made of regional world populations (Denton, 1993a) 35000 B.C. to 2000 A.D., we may compute expected populations (nP(X=x)) of individuals designatable X=x, x=1,2, ... by region for each of the 38 time points. Summing regional expected populations designatable X=x provides a value for the population of the world designable X=x at each time point. The proportion of individuals in the world at a time point characterizable X, X=1,2,... may be thought of as the probability that an individual is characterizable X, X=1,2,... at the time point. This probability may also be attained directly by simply plugging world $P(Y=y)$, obtained by working up from regional expected populations into proportions of world population, into equation (1).

The cross-cultural data base used is the HRAF Quality Control Sample (QCS) 60 cultures (Levinson and Wagner, 1986). Several simplifying assumptions are made. It is assumed that regional population and regional $P(Y=y)$, y=1,2,3 are exactly known at each time point. It is assumed that, although conditional probabilities $P(X=x \mid Y=y)$ obtained from the QCS are estimates subject to sampling variability, no measurement error exists in QCS codings. In addition to these simplifying assumptions there are some additional assumptions which are spelled out in Denton (1993a and 1994). Of these assumptions the most important are: 1) that the QCS data base may be used to estimate conditional probabilities $P(X=x \mid Y=y)$ for prehistoric societies; and 2) that the use of random variable Y, Y=1,2,3 which is a surrogate measure of cultural complexity permits us to assume that the probabilities $P(X=x \mid Y=y)$ are invariant (stationary) over time. Time series values produced by the method supra using QCS are considered by the writer as adequate for time points 35000 B.C.