PROGRAMA DE PÓS- GRADUAÇÃO EM ANTROPOLOGIA SOCIAL

Curso: OUTLINE FOR SUMMER SEMINAR IN QUANTITATIVE ANTHROPOLOGY

CURSO DE FÉRIAS   Prof. HENRY A. SELBY

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Purpose of Course

The course is designed to give advanced students of anthropology a critical appreciation and basic skill in handling quantitative and formal (mathematical) techniques that are becoming of increasing utility in anthropology utility in anthropology. Three aspects of anthropological study will be stressed; research design, critical understanding of quantitative work, and student capability in the use of probabilistic and formal techniques.

Prerequisites for Course

The lectures will be given in Spanish. Reading in English will be assigned. A basic understanding of elementary statistical techniques will be demanded.

Design of Course

The course will be divided into two parts, the first on data analysis, and the second on model construction.

1. Analysis of Data

Review of basic concepts in probality and statistics. Assumptions of statistics (normality, type I, and type II errors, probability distributions, multinomial approximations and Chi Square). Research using Chi square (O'Nell and Selby will be available). Cross-cultural work and Chi square (critique of Murdock (1949), Driver (1956), and Benfer (1968).

Research design: probability sampling, reliability, replicability, choice of variables.

Other research statistics: Rank order methods (difference matrices, factorial design based on rank orderings); biserial correlation, tetrachoric correlation, contingency coefficients, discriminant funsctions.

Simple analysis of variance.

Introduction to scales and scaling. (Outtman, Thurstone).

2. Mathematical Models

Introduction to Matrix Algebra. Rationale, applicability and limitations of mathematical models. Stochastic Processes (Probability trees, Markov Processes) Linear Programming, Game Theory.

Graph Theory

Each part will take up about two weeks, and there will be a review sessio at the end. Each part of the course will be accompanied by materials for criticism and analysis.

Mode of Teaching Course

Depending on the nature of the materials it is projected that teaching time be allotted equally between lecturing in theory (with examples), and laboratory work with the instructor present. Introducing material will require that a relatively longer time be spent in lecturing, while the elaboration of techniques will require that relatively shorter, more frequent lectures be given.

Tentative Book List

The following is a possible list of books to be used.

1. Analysis of Data

Menemar, Quinn (1965) *Psychological Statistics.* New York. Wiley.

Murdock, G.P. (1949) *Social Structure.* New York. Macmillan.

Kerlinger, Fred (1965) *Foundations of Behavioral Research.* New York. Molt Rinehart and Winston.

Torgerson, W.S. (1958) *Theory and Method of Scaling.* New York. Wiley.

Buchler, I.R. and Selby, H.A. (1958) *Kinship and Social Organization.*New York. Macmillan.

2. Mathematical Models

Kemeny, J.G., Snell, J.L., and Thompson, G.L. (1965) *Introduction to Finite Mathematics.* Englewood Cliffs, N.J. Preventive Hall.

Parzen, N. (1965) *Modern Probability Theory and its Applications.* New York. Wiley.

Rapaport, A. (1960) *Fights, Games and Debates.* Ann Arbor, Mich. University of Michigan Press.

Harary, F., Norman, R.Z. and Cartwright, D. (1965) *Structural Models: An Introduction to the Theory of Directed Graphs.* New York. Wiley.