A Strategy of Analysis of Variations in Family Structure: Actual Convergence and Ideal Patterns Marion J. Levy Jr., Center of International Studies, Princeton University

Ladies and Gentlemen, it is beyond the everyday call of my arrogance for me to be here at all since I am in no sense expert or even literate in either statistics or demography on which the work I shall propose depends. In these matters I am fortunate in being able to rely on the help of scholars such as your chairman, Paul Demeny, Carl E. Helm, Roger S. Pinkham, Frederich F. Stephan, and Charles F. Westoff. Without their help and past help from Ansley J. Coale I would not continue this work.

This work was undertaken using statistics, demography and computer facilities but not in the spirit or hope that serendipity was a major method of analysis instead of a by-product of science. Rather I believe that it is possible to combine these elements and come to conclusions about the range of variations of actual family structures having to do with numbers of members, generations represented, age distribution, sex distribution, marital spouse pair distribution, sibling distribution, etc. that are in important respects independent of many other myriad variations in the patterns of the societies presently, previously, or likely to be extant.

This is an attempt to arrive at extremely general knowledge of both theoretical and practical significance in terms of an explicit strategy of analysis. It seeks to do this in terms of a small number of considerations [variables and constants] chosen in such a way that their implications for the empirical phenomena to which they are presumed to apply are not likely to be erroneous or misleading even though no attempt at descriptive treatment is made.

The analysis of family phenomena is the focus because: 1. The family as that term is used here is a type of organization found as a sub-system of all known societ $\frac{1}{2}$, 2. The vast majority of individuals in all known societies have roles in some family organization throughout their life The behavior of histories, and, 3. individuals in all other context ideally and/or actually is extremely likely to be affected by what happens to them in a family context. For these reasons any highly generalized knowledge about family contexts is likely to have general implications for all social phenomena.

The guiding principle of this strategy of analysis is that failure to distinguish systematically between ideal and actual patterns has led us to overlook many actual uniformities, while perceiving important variations in ideal patterns.

The second element in this strategy is to stick as closely as possible to the implications of biological and psychological factors or aspects for social analysis--to abandon the overreaction to the past excesses of biological determinists, etc.

The third principle of this strategy is that the findings of demography constitute our most reliable data-tool when we seek hypotheses whose applications by their very generality cut across wide varieties of language and other social distinctions. That we are less likely to go wrong asking how many died and how many were born and then scouting the implications of this for what interests us than by asking most other questions. Furthermore, the work already in hand by demographers is of a high order of sophistication, and no other set of findings of such general implications or subjected to such high order critical scouting is available.

One of the most obvious examples of this strategy is the certainty with which we can dispose of the implication that a polygynous society is one whose male members upon reaching maturity generally acquire two or more wives. It cannot be so unless peculiar circumstances converge, and it has probably never been so in history. These are societies whose members have polygyny as an ideal pattern--probably realized by a small minority of males who by that alone would be considered an elite set. The reasoning is simple. Everywhere the ratio of males to females at birth is very slightly in excess of unity--varying say from 103/100 to 107/100. Under these circumstances only mortality rates of a peculiar sort would make it possible for the great majority or even bare average,"men to have two or more wives. Realization of this of course, expands the implications of the presence of polygyny as an ideal pattern.

The present project grew out of an essay pending publication. [Aspects of the Analysis of Family Structure, Princeton University Press, Spring `65.] In that essay the following distinctions were made:

- 1. Societies were distinguished on the basis of the presence or absence of modern medical technology and modernization in general.
- 2. The maximum range of size of family membership is covered by the range of patterns from nuclear to extended families.
- 3. Patterns were distinguished as ideal [i.e., believed good and proper by the persons referred to] and/or actual [i.e., extant as an observed pattern of behavior rather than of belief].

Given the demographic findings and probabilities the hypothesis was constructed that well over 50% of all family sizes would fall under the same curve of distribution characteristics of societies with ideal patterns calling for nuclear families. The index for family size only varied between 1 and 1.75 save in cases of late comers to modernization who had imported modern technology but not yet the rest of modernized patterns. That state was predicted to be unstable.

The line of reasoning employed [e.g., in the absence of modern medical technology few grandparents long survive the birth of grandchildren--ideal patterns to the contrary not withstanding] has implications for other considerations than size of family membership. Specifically it has implications 1. age distributions, 2. sex for: distributions, 3. marital pair distribution, 4. sibling distribution (male siblings, female siblings and mixed), generational distributions, etc. 5. These distributions plus that of size of membership certainly do not determine all other family variations and possibilities--but they are certainly not without implications for many or most of them. By use of the computer and the strategy of analysis indicated we seek to show what the actual variations possible are in any of these matters given any possible combinations of ideal patterns. If the strategy of analysis is effective, any possible use must fall at or close to one of the points here identified in terms of pause variables.

Without attempting to use a computer to "run everything against everything," I hope with the aid of my colleagues to test the actual implications of varying ideal patterns [from nuclear family structures through stem family structures, to extended family structures] of various factors chosen as setting parameters within which all actual cases must fall. For example ratios of birth to death rates starting at say 80/80 and going down in intervals of 5 [e.g., 80/75, 80/70...; 75/80, 70/80...] and running to 10/10 will be used. Marital ages set at 11, 13, 15, . . . 39 will be used. Sub-routines. to test whether maximum possible error one year in the case of ideal marital ages | can make much difference to the various outcomes predicted, can be set up.

If this simulation can be carried out--and the program for it in IPL is being written now, we hope to have all possible societies within our sets of boxes. The more accurately anyone can describe the ideal and actual patterns of a given society, in terms of the small number of variables called for here the more accurately we can locate it in all of these respects.

No claim is made of the relevance of these matters to everything, but the arguments about the relevance of family phenomena to other social contexts makes total irrelevance unlikely. Certainly these findings would have implications for any others that could be hooked up to such elements [e.g., if a given type of character structure does vary with birth order or number of generations represented in the family unit, these findings would predict the actual and possible incidence of those character traits for any society].

Finally there is another, hope, belief, prediction--call it what you will--even more extravagant. If this simulation can be effected, there must be the possibility of concise mathematical statement of it.