Community Wealth Concentration: Comparisons in General Evolution and Development*

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An expanding literature points to increased inequality with economic development. Studies of income and wealth distributions show that communities are much less egalitarian after development than before.[1] Benefits are concentrated among a few, while the majority are at least relatively, if not absolutely, worse off after economic development. Chenery of the World Bank states, "It is now clear that more than a decade of rapid growth in underdeveloped countries has been of little or no benefit to perhaps a third of their population."[2]

For most human history, communities have been egalitarian. Egalitarian communities characterize primitive and tribal societies in which wealth does not show concentration and for which social classes do not exist. While all societies have inequalities, in egalitarian communities "high statuses do not confer great privilege or wealth."[3]

The nature and extent of equality in egalitarian communities has not

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[1] Irma Adelman and Cynthia Taft Morris, *Economic Growth and Social Equity in Developing Countries* (Stanford, Calif.: Stanford University Press, 1973); Hollis Chenery, Montek S. Ahluwalia, C. L. G. Bell, John H. Duloy, and Richard Jolly, *Redistribution with Growth* (London: Oxford University Press, 1974); T. Scarlett Epstein, *South India: Yesterday, Today and Tomorrow: Mysore Villages Revisited* (New York: Macmillan Co., 1973); Dwight Y. King and Peter D. Weldon, "Income Distribution and Levels of Living in Java, 1963–1970," *Economic Development and Cultural Change* 25 (July 1977): 699–711; and Gunnar Myrdal, *Asian Drama: An Inquiry into the Poverty of Nations* (New York: Twentieth Century Fund, 1978), and *The Challenge of World Poverty: A World Anti-Poverty Program in Outline* (New York: Pantheon Books, 1970).

[2] Chenery, p. xiii.

[3] Elman R. Service, *Origins of the State and Civilization: The Process of Cultural Evolution* (New York: W. W. Norton & Co., 1975), p. 291.

been evaluated quantitatively, nor has the amount of change due to economic development been measured. Usually comparisons are made based on average differences. Clearly, average material wealth of primitive communities is less than that of developed communities. But averages tell nothing about wealth distribution within a group. Change in concentration of wealth in general evolution and economic development are questions which require knowing how the shape of distributions changes.

Wealth in Egalitarian Communities

If everyone is equal, figure 1*A* shows the distribution of wealth. Fried cautions, "Because there can be no such thing as a society composed of exactly equal members, one may wonder that we use the term 'egalitarian

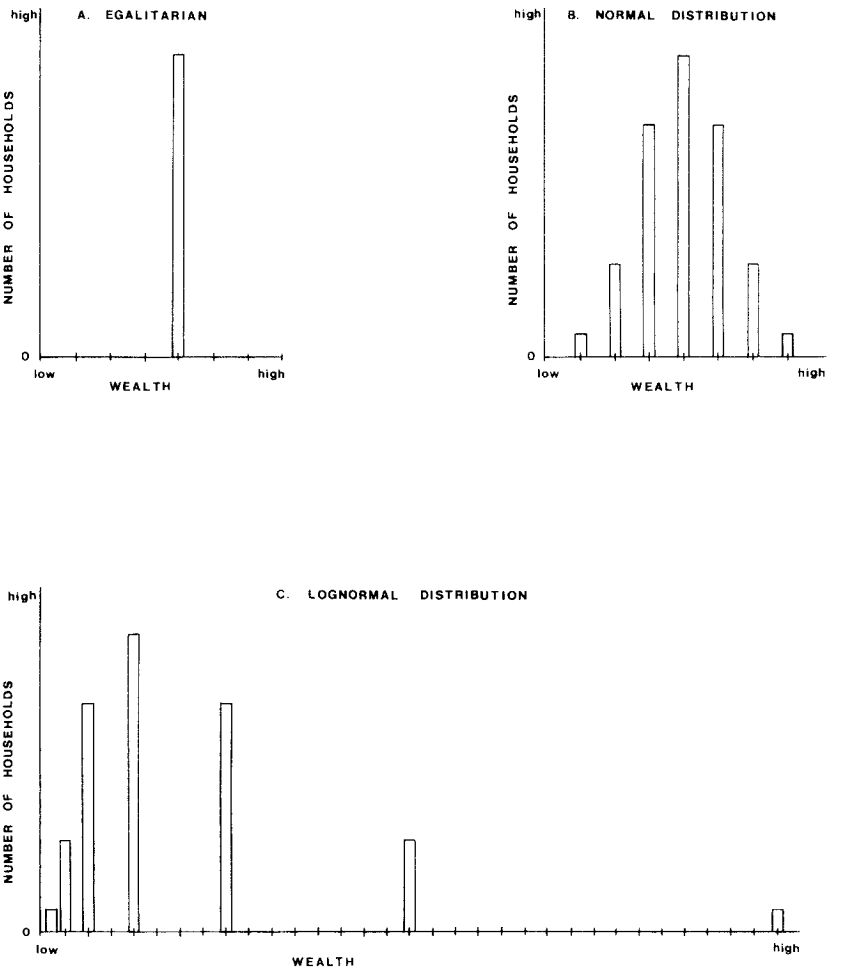

FIG. 1.—Hypothetical wealth distributions. *A*, egalitarian; *B*, normal; *C*, lognormal.

society.' Two justifications are offered. First, the term may be understood as an ellipsis, the missing word being 'relatively.' . . . Second, the term is itself somewhat programmatic and is encountered in political slogans."[4] Concern is with the first use of "egalitarian," that of measuring relative differences. Once relative differences are clearly established, however, they cannot escape political notice.

Assume that a society's goals and cultural practices are to be egalitarian, but due to variable household size, different individual skill, and differences in success, equality is not achieved. In this situation, the number of households falling above and below perfect equality might approach a normal distribution (fig. 1*B*). This assumes that all factors by which households depart from being egalitarian distribute randomly and are additive in their impact.

A number of social mechanisms prevent wealth concentration in egalitarian societies. They are unstratified. Rules are maintained through the domestic family. Authority is absent. There are no permanent leaders. Physical force is not mobilized by any public power. Government is absent, and decisions are arrived at through broad participation among community members in the decision-making process. Egalitarian societies are nonhierarchical.[5]

Wealth distributions in egalitarian societies, then, are hypothesized to be more normally distributed, reflecting the absence of hierarchy and stratification. In nonegalitarian societies, multiplication of wealth differences is expected. For example, would a 1,000-wealth unit reward be adequate for two people, one starting with 1,000 wealth units and one with 10,000 wealth units? For the first person, addition of 1,000 wealth units doubles overall wealth. For the other, wealth increases only 10%. To reward each one by the same relative amount requires multiplying each's wealth by the same factor. To double the wealth of each, the factor would be two. In a stratified society, therefore, multiplication of wealth differences is necessary to reward each class equally.

Assume wealth is normally distributed among seven classes (fig. 1*B*). This can be converted to a hierarchical distribution in which differences are multiplied by taking the mode and doubling wealth for each interval above and halving wealth for each unit below the mode (fig. 1*C*). The wealth distribution's shape changes from normal to lognormal.

Measuring Wealth Concentration

Wealth distribution has important social meaning. A number of measures to assess wealth concentration are available and summarized in the eco-

[4] Morton H. Fried, *The Evolution of Political Society* (New York: Random House, 1967), p. 28.

[5] Ibid., pp. 27–107; Service, pp. 47–70; Marvin Harris, *Culture, People, Nature: An Introduction to General Anthropology*, 2d ed. (New York: Thomas Y. Crowell, 1975), pp. 288–92; and Julian Pitt-Rivers, "The Egalitarian Society," in *VI Congrés international des sciences anthropologiques et ethnologiques* (Paris: Musée de L'Homme, 1963), bk. 2, 1:299–33.

nomics literature.[6] Economists generally reject raw frequency distributions in favor of cumulative frequency distributions and logarithmic plots.[7] Anyone who has tried to plot U.S. wealth or income data knows the advantages of a log scale or conversion to percentiles. This procedure, however, obscures the impact of those who control large amounts of wealth.

The method of moments, suggested by Young,[8] is an alternative approach that provides an index of a distribution's shape. Four moments describe a frequency distribution. Depending on the distribution, additional moments can be computed.[9] The first two moments, average and sample variance, are most commonly used, but they are measures of central tendency and not shape. The third and fourth moments, skew and kurtosis, are more useful shape indicies.

Skew indicates distortion. A perfectly normal curve has no distortion. Negative skewing means that the bulk of the population lies to the mean's right. Positive skewing means that more of the population lies to the mean's left. For a distribution in which wealth levels are plotted from low to high, positive skewing indicates an unequal distribution in that most people have a low level of wealth while there are only a few with high levels.

Kurtosis measures concentration. It indicates whether most of the population clusters close to the mode, while only a few cases are well away from the mode. In wealth distributions, increasing kurtosis values above zero indicate that a few people or households have high levels of wealth, while most of the population is concentrated at the low end of the wealth scale. Decreasing kurtosis values below zero[10] indicate more even distribution of wealth over the range observed for the population. Kurtosis is particularly sensitive to small elements of the population having wealth several times the mode. This situation is typical of lognormal distributions.

[6] Martin Bronfenbrenner, *Income Distribution Theory* (Chicago: Aldine-Atherton Publishing Co., 1971); and Jan Pen, *Income Distribution: Facts, Theories, Policies* (New York: Praeger Publishers, 1971).

[7] Mary Jean Bowman, "A Graphical Analysis of Personal Income Distribution in the United States," *American Economic Review* 35 (September 1945): 607–28.

[8] Allyn A. Young, "Do the Statistics of Concentration of Wealth in the United States Mean What They Are Commonly Assumed to Mean?" *Journal of the American Statistical Association* 15 (March 1917): 471–84.

[9] Maurice Kendall and Allan Stuart (*The Advanced Theory of Statistics* [London: Charles Griffin & Co., 1967], 1:87) warn, "It does not, however, follow that the moments completely determine the distribution, even when moments of all orders exist. Only under certain conditions will a set of moments determine a distribution uniquely, but fortunately for statisticians, those conditions are obeyed by all the distributions arising in statistical practice. For all ordinary purposes, therefore, a knowledge of the moments, when they all exist, is equivalent to a knowledge of the distribution function: equivalent, that is, in the sense that it should be possible *theoretically* to exhibit all the properties of the distribution in terms of moments."

[10] Kurtosis for a normal distribution is usually reported as 3.0. All values of kurtosis have been standardized to zero by subtracting 3.0.

A normal distribution has distortion and concentration equal to zero. For the wealth distribution in figure 1*C*, where the difference between each interval is doubled, distortion is 2.4 and concentration is 7.2.

Comparing Wealth Distributions

By analyzing community studies made in tribal and state societies, can the pattern of wealth distribution differentiate egalitarian and nonegalitarian communities? The first hypothesis is that distributions in tribal, egalitarian communities have distortion and concentration more like a normal distribution (fig. 1*B*) in which distortion and concentration are close to zero. For state, nonegalitarian communities the hypothesis is that wealth is more lognormally distributed (fig. 1*C*), and distortion and concentration should be more like those for figure 1*C*.

Wealth is selected for comparison over income because it is an important determinant of income.[11] This is particularly true for peasant and developing communities, where land distribution often is the basis of income and material well-being. Wealth is measured by landownership, animal ownership, control over resources, and like units. The actual unit varies with the nature of the community. For agriculturalists, arable land is the most important unit. For pastoralists, animal units are more important. For fishermen, boats and gear are more important.

Community is selected as the social unit of analysis, rather than region or nation, because community studies include explanations of the social and cultural mechanisms which affect wealth distribution. Community is a social unit common to tribal and peasant societies and, therefore, can be used as a basis for comparison. Community is also a more common unit of ethnographic analysis. A problem with use of communities is that they are not necessarily representative of larger social units, for example, tribes, regions, states, or nations. An egalitarian community can exist within a nation having unequal wealth distributions. Community studies have a rural bias and rural areas tend to be more egalitarian than urban.

Within communities, data by household are preferred. This follows Kuznets's suggestion that households are "more clearly identifiable, more inclusive, more independent."[12] Some of the cases used did provide data by individual. In most cases this is a household head. In several cases data could be controlled by relative size of household, which Kuznets recommends.[13] The objective is to compare the shape of distributions; therefore, the most important criteria is that data be reported according to how the culture being evaluated conceptualizes wealth.

[11] My experience is that land ownership is more distorted and concentrated than income farm assets, or household assets (see also Martin Bronfenbrenner and Richard Disney, "Some Measures of Rural Income Distribution in Ethiopia," *Development and Change* 7 [1976]: 35–44).

[12] Simon Kuznets, "Demographic Aspects of the Size Distribution of Income: An Exploratory Essay," *Economic Development and Cultural Change* 25 (October 1976): 86.

[13] Ibid., p. 87.

Tribal communities are commonly referred to as egalitarian, and wealth is not usually measured. Why measure something that is not regarded as important and for which there is little variation? This is not likely to be of great scientific interest. Few studies, therefore, provide data on wealth distributions for tribal communities. From the Peabody Museum catalog, some studies were located which provide data to calculate community wealth distributions (table 1). Studies of wealth differences in peasant communities are more numerous. Several are presented in table 1 for comparative purposes.

Distortion and concentration calculations for data taken from 14 communities are listed in order of concentration, kurtosis, from least to

TABLE 1

COMMUNITY WEALTH DISTRIBUTION COMPARISONS, ORDERED ACCORDING TO CONCENTRATION

Community	*N*	Wealth Unit	Distortion (Skew)	Concentration (Kurtosis)
1 Iyon	52	Acres/compound/capita	.7	−.1
2 Pul Eliya	39	Bund/individual	1.0	−.1
3 Utatuu	30	Wealth index/farmstead	1.2	.2
4 Genieri	19	Acres/compound/capita	1.3	.4
5 Sari	51	Pigs/man	.9	.8
6 Mazulu	20	Acres/family/capita	1.1	1.0
7 Ramah Nyala	32	Acres/family	1.1	2.0
8 Ping Shan	42	Dau-chung/farm	2.7	10.7
9 Tanam	164	Acres/family	3.1	11.0
10 Cantel	234	Cuerda/agriculturalist	3.0	11.5
11 San José	37	Pesos/household	3.2	12.9
12 Botukebo	55	Wealth in beads/individual	3.5	13.7
13 Tepoztlán	853	Wealth score/family	3.4	18.2
14 Medong	255	Acres/family	3.7	22.0

SOURCES.—(1) Paul Bohannan, *Tiv Farm and Settlement* (London: Her Majesty's Stationery Office, 1954), pp. 78 and 80; (2) Edmund Leach, *Pul Eliya, a Village in Ceylon: A Study of Land Tenure and Kinship* (Cambridge: Cambridge University Press, 1961), p. 184; (3) Harold K. Schneider, *The Wahi Wanyatura: Economics in an African Society*, Viking Fund Publications in Anthropology, no. 48 (New York: Wenner-Gren Foundation for Anthropological Research, Viking Fund Publications in Anthropology, 1970), p. 81; (4) Margaret R. Haswell, *Economics of Agriculture in a Savannah Village: Report on Three Years Study in Genieri Village and Its Lands, the Gambia*, Colonial Research Studies, no. 8 (London: Her Majesty's Stationery Office for the Colonial Office, 1953), pp. 20, 92; (5) M. J. Meggitt. "The Mae Enga of the New Guinea Highlands: Some Preliminary Observations," *Oceania* 28 (1958): 287; (6) Thayer Scudder, *The Ecology of the Gwembe Tonga* (Manchester: Manchester University Press, 1962), appendix B; (7) Vinson H. Sutlive, Jr., *The Iban of Sarawak* (Arlington Heights, Ill.: AHM Publishing Corp., 1978), p. 125; (8) Jack M. Potter, *Capitalism and the Chinese Peasant: Social and Economic Change in a Hong Kong Village* (Berkeley: University of California Press, 1968), pp. 62–63; (9) H. S. Morris, *Melanau Sago Producing Community in Sarawak*, Colonial Research Studies, no. 9 (London: Her Majesty's Stationery Office, 1953), pp. 15 and 16; (10) Manning Nash, *Machine Age Maya*, American Anthropological Association Memoir 87 (Menasha: American Anthropological Association, 1958), p. 22; (11) John S. Thomas, "Kinship and Wealth in a Maya Community," *Human Organization* 37, no. 1 (Spring 1978): 26; (12) Leonard Pospisil, *Kapauku Papuan Economy*, Yale University Publications in Anthropology, no. 67 (New Haven, Conn.: Yale University Publications in Anthropology, 1963), pp. 463–64; (13) Oscar Lewis, *Life in a Mexican Village* (Urbana: University of Illinois Press, 1951), p. 174; and (14) H. S. Morris, pp. 14 and 16.

most. In figure 2 distortion and concentration measures for each community are plotted in association with the values predicted for a lognormal distribution. Both the table and figure show a continuum of values from communities having distortion and concentration values more like that of a normal distribution to communities showing extensive wealth concentration.

What about the quality of these data and the calculations made from them? First, are the measures used wealth indicators? Ethnographic details accompanying each study indicate that the unit used is a community wealth indicator. Some measures are better than others. For Utatuu, San José, Botukebo, and Tepoztlán actual wealth measures are available. For other communities landownership is the principal measure, except, for example, in Sari where pig ownership is the principal determinant of wealth. Genieri village has the weakest wealth indicator. Here the acreage used to grow the principal crop is used.

For 11 of the 14 communities sample size is not a problem since the community wealth distributions are total enumerations. Distortion and

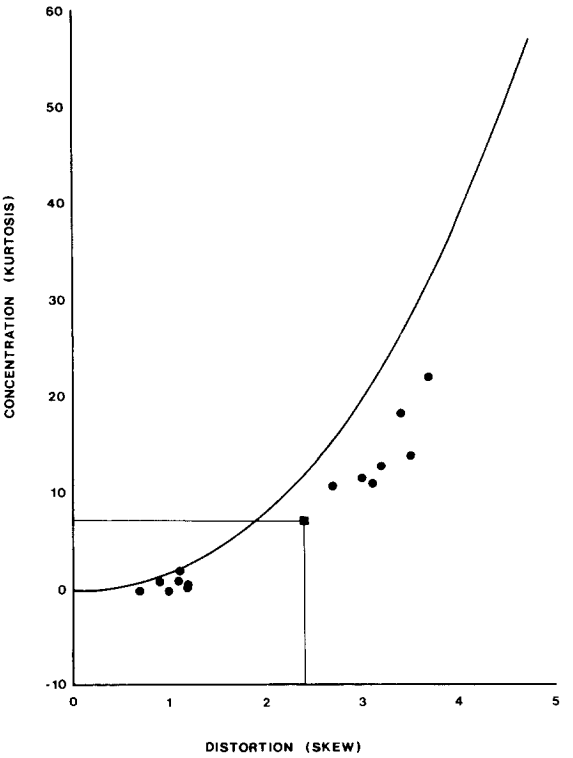

FIG. 2.—Relation between distortion and concentration showing location of table 1 communities (●) and doubling point for hypothetical lognormal distribution (■).

concentration calculations raise data to the third and fourth powers; therefore, they are very sensitive to measurement and sampling errors. This analysis is based on the assumption of no measurement error, and in the three cases that were based on sampling, a representative sample is assumed.

A more critical measurement problem is the way data are reported. In four communities data are grouped. Grouped data present several problems for calculating distortion and concentration.[14] First, what is the representative value for each interval? If 35 cases fall between 10 and 15 acres, is the midpoint, 12.5 acres, an adequate representation for all the cases? Calculations assume the center of each interval represents the value for all cases in that interval. Second, cases at the high end of the wealth distribution are usually truncated into one final group. In Medong, for example, 13 of 255 households had acreage of more than 60 acres. Reviewing individual ownership distributions showed that three individuals had acreages of 90, 150, and 190 acres. Truncation changes distortion and concentration measures significantly. Medong without these large landowners had distortion and concentration of 1.6 and 1.4, respectively.

Average and variance, the first and second moments, are not included in table 1. This is to focus attention on measures of shape rather than central tendency. Further, knowing that the average land owned per Mazulu compound per capita was 1 acre, that Ping Shan farms averaged 7.4 dau-chung, and that each agriculturalist in Cantel had about 13 cuerada does not tell very much. These areas standardized to metric units are 4,060, 4,030, and 5,740 m^2, respectively. Even this standardization is not helpful because land varies in, for example, soil quality, water availability, and productivity. How are Utatuu "wealth index," Botukebo "glass beads," San José "pesos," and Tepoztlán "wealth score" to be standardized? Each wealth measure takes into account factors ethnographers of the community found to connote wealth. Measures of shape are unit free and enable comparison of distortion and concentration in wealth distributions irrespective of whether wealth is measured in land area, pigs, glass beads, pesos, or some other index.

Note that results plotted in figure 2 follow what would be expected

[14] Several approaches have been tried in making these calculations. Initially a program was written using a formula for calculating grouped data. This was used with and without the Sheppard correction which accounts for the impacts of grouping (see E. Pairman and K. Pearson, "On the Corrections for Moment Coefficients of Limited-Range Frequency Distributions When There Are Finite or Infinite Ordinates and Any Slopes at the Terminals of the Range," *Biometrika* 12 [November 1919]: 231–58). These calculations proved unsatisfactory because grouping intervals were never equal, and there were usually empty intervals. The solution that proved most satisfactory was to assume each case in an interval was at the midpoint and then treat the data as individual cases. This required a program to read the number of cases in each interval as individual cases. Calculations were then made using SPSS (Norman H. Nie, C. Hadlai Hull, Jean G. Jenkins, Karin Steinbrenner, and Dale H. Bent, *SPSS Statistical Package for the Social Sciences*, 2d ed. [New York: McGraw-Hill Book Co., 1975], p. 185).

for a lognormal distribution, except there is a uniform shortfall from the curve. This is because community wealth distributions are truncated and do not cover the same range as an ideal normal distribution.

Table 1 shows a group of communities, 1–7, whose distortion and concentration measures are close to that of a normal curve. For all these communities distortion is less than 1.3, and concentration is less than 2.0. Communities 8–14 all have distortion and concentration scores reflecting more lognormality. These communities have distortion greater than 2.7 and concentration greater than 10.7. These values are greater than the doubling of wealth for each interval that is illustrated in figure 1*C*.

Ethnographic facts for several communities help elaborate the wealth patterns. Rumah Nyala, 7, is an Iban community of Sarawak. Freeman and Sutlive, ethnographers working with the Iban, characterize them as egalitarian: " . . . the Iban long house is fundamentally a series of discrete entities—the independent family units of a competitive and egalitarian society";[15] "The thoroughgoing egalitarian ethic of the Iban, holding in dynamic tension competition and cooperation, has provided a device for leveling members in each long house."[16] Ping Shan, 8, is a stratified rural Chinese cluster of communities in Hong Kong's New Territories. Concentration of landownership is not a new phenomenon, as Potter indicates: " . . . proponents of the orthodox thesis tend to blame too much of the concentration of land ownership in China on the effects of modern industry and commerce. Landlords owning large amounts of land are by no means a modern phenomenon and were present in some areas of China long before Western economic contact."[17] Concentration in Ping Shan is not as extreme, nor is landownership the best measure of wealth concentration: " . . . economic leveling between farmer and landlord can be attributed largely to the fact that rents have not risen as rapidly as the value of the produce of the land. . . . Although many of the more conservative villagers still tend to classify a man socially on the basis of his private landholdings, there is evidence that status will be increasingly determined by occupation, salary, and level of living."[18]

Except for Pul Eliya, 2, all of the first seven communities would be classed as simple agriculturalists. Most are tribal societies, which at the time of study were just coming in contact with modernizing influences and economic development. All the communities in 8–14, with the exception of Botukebo, 12, are peasant communities. Data, therefore, reflect the tribal, egalitarian, and state, nonegalitarian, pattern described in the

[15] Derek Freeman, *Report on the Iban*, London School of Economics Monographs on Social Anthropology, no. 41 (New York: Humanities Press, 1970), p. 1.

[16] Vinson H. Sutlive, Jr., *The Iban of Sarawak* (Arlington Heights, Ill.: AHM Publishing Corp., 1978), p. 185.

[17] Jack M. Potter, *Capitalism and the Chinese Peasant: Social and Economic Change in a Hong Kong Village* (Berkeley: University of California Press, 1968), p. 179.

[18] Ibid., p. 173.

literature. But there are two strikingly deviant cases—Botukebo and Pul Eliya.

The explanation for the Kapauku community, Botukebo, comes from Pospisil: "The Kapauku, unlike many primitive peoples, are basically profit motivated in most of their activities. They place a great emphasis on accumulation of personal wealth, from which they derive, through the extension of credit, the highest prestige and following."[19] Cultural factors determining Kapauku wealth distribution differ in two important ways from state societies. First, wealth is used up in each generation. Kapauku reach peak wealth in their early thirties. Wealth then declines and reaches near zero at the age of 60–65. Second, the Kapauku have no intergenerational accumulation of land for agriculture. It is in agriculture that the path to wealth accumulation starts. According to Pospisil, "Farming is important, especially during the early part of a man's career when the young cultivator depends on his own gardens for fodder for his pigs, in the later years clever business deals and skillful selections of contractual pig breeders, . . . , assure the Kapauku of further increase in wealth."[20]

For the Sri Lankan peasant village, Pul Eliya, Leach analyzed the land tenure system.[21] Traditional Sri Lankan villages operated on the doctrine of fair shares with each member of the community getting equal rights to irrigation water. Water was the determining factor in food production.

Ancient Sinhalese kingdoms date from 200 B.C. After A.D. 1400, political decay and depopulation followed. British colonialism was imposed. Colonial policy operated against village egalitarianism in water rights. It was designed to favor "the relatively wealthy peasant at the expense of his poorer neighbor."[22]

In spite of decline and the impacts of colonial administration, egalitarian attitudes persisted. Pul Eliya villagers at the time of Leach's mid-1950 study believed that the land tenure system and irrigation management practices had been handed down from ancient times. While Leach argues that this is not historically accurate, egalitarianism does appear to be a Sinhalese cultural trait. Egalitarianism is reflected in public policies such as the Land Development Ordinance of 1936 which was designed to take land away from the wealthy absentee landlords and redistribute it to landless peasants. Cultural mechanisms of inheritance and village obligations operated to reduce wealth levels. People of high status were expected to indulge in lavish expenditure. Pul Eliya has a tradition of egalitarianism in the distribution of water which is required

[19] Leopold Pospisil, *Kapauku Papuan Economy*, Yale University Publications in Anthropology, no. 67 (New Haven, Conn.: Yale University Publications in Anthropology, 1963), p. 381.

[20] Ibid., p. 383.

[21] Edmund R. Leach, *Pul Eliya, a Village in Ceylon: A Study of Land Tenure and Kinship* (Cambridge: Cambridge University Press, 1961).

[22] Ibid., p. 49.

to assure agricultural productivity. Further, Sri Lankan national policy operates to prevent concentrations of wealth in the hands of a few.[23]

If cultural practices favoring egalitarianism show a peasant community, like Pul Eliya, to be more egalitarian and a tribal community, like Botukebo, to be more nonegalitarian, the sharp break reflected in table 1 and figure 2 may really be a continuum. This is in fact the case.

Nash studied two Burmese communities, Nondwin and Yadaw. Nondwin was a dry farming village and Yadaw was irrigated. The time of study was 1959–60 when the Burmese government had just begun the process of decolonization. In Nondwin, Nash identifies four social classes, the poor, moderate, rich, and big rich.[24] For Yadaw there are "neither categories of big rich nor really rich, but six households are considered by villagers to have solid withholding power." These families got that way "through different sequences of chance; none of them planned it, strove for it, nor is there an orderly, culturally known way to get ahead in economic terms."[25] From this description we would expect Yadaw to be more egalitarian than Nondwin. Table 2 presents the comparison. Yadaw is more egalitarian, but Nondwin is not as nonegalitarian as the term "big rich" suggests. "Big rich" is a relative term. Nash goes on to say, "These differences in the level of living are not as apparent to the eye as the figures would lead one to assume. Poverty in the Burmese village is not of high visibility. There is enough rice, beans, oil and fish.... The richest, of course, tend to have the wooden, two-story houses, but beyond that, a man's wealth is not discernible in his house style or in his household furnishings."[26]

In some communities, fragmentation rather than concentration is the problem. Lewis compared landholdings in the North Indian community

TABLE 2

WEALTH DISTRIBUTION COMPARISON OF TWO BURMESE VILLAGES

	COMMUNITY	
	Nondwin	Yadaw
Distortion (skew).....	1.6	1.0
Concentration (kurtosis).....	4.3	.8

SOURCE.—Manning Nash, *The Golden Road to Modernity: Village in Contemporary Burma* (New York: John Wiley & Sons, 1965), pp. 27, 224.

[23] Chenery et al.; Myrdal, *Asian Drama* (both n. 1 above); and F. C. Roche, "The Demographic Transition in Sri Lanka: Is Development Really a Prerequisite?" mimeographed (Ithaca, N.Y.: Cornell University, 1976).

[24] Manning Nash, *The Golden Road to Modernity: Village in Contemporary Burma* (New York: John Wiley & Sons, 1965), p. 29.

[25] Ibid., pp. 232–33.

[26] Ibid., p. 42.

of Rampur in 1910 and 1953.[27] None of the landowning families in 1910 owned less than 6.25 acres of land. There was considerable concentration, as shown in table 3. By 1953, nearly half of the families owned less than 6.25 acres. Note from table 3 that concentration was much less in 1953. Lewis summarizes the problem: "Despite the differences in landholding, wealth, and power within the village, the main problem in Rampur is not one of excessive concentration of land in the hands of a few. . . . There is no absentee landownership in Rampur, and there are no large landholdings, to the extent found elsewhere. The main problem in the village seems to be simply an inadequacy of land resources."[28] In the case of Rampur, inheritance patterns for greater egalitarianism merely spread poverty more broadly.

These examples show how cultural factors can alter the general pattern of expected values for wealth distortion and concentration. Table 1 and figure 2 indicate that tribal communities typically are more egalitarian than state communities. Wealth distributions in tribal communities are less distorted and concentrated. In terms of general evolution, tribes predate states, and tribes have a much longer span of existence. Nonegalitarian communities are new to the overall scheme of human evolution.

Wealth distribution in egalitarian communities is more like that of a normal distribution. In nonegalitarian communities, wealth distribution shows the multiplication of differences characteristic of a lognormal distribution. All nonegalitarian communities in figure 2 are beyond the doubling point for the hypothetical distribution in figure 1*C*. The multiplication factor, therefore, between levels is at least two.

Concentration with Development

The second hypothesis from looking at wealth distributions is that many examples indicate increased concentration of wealth with economic development. Comparisons over time should reflect higher concentration after economic development or technological change than before. Sahlin's study of social stratification in Polynesia concludes, "The greater the

TABLE 3

WEALTH DISTRIBUTION COMPARISON OF RAMPUR, A NORTH INDIA COMMUNITY, IN 1910 AND 1953

	1910	1953
Distortion (skew).....	4.3	1.8
Concentration (kurtosis).....	23.2	4.7

SOURCE.—Oscar Lewis, *Village Life in Northern India: Studies in a Delhi Village* (Urbana: University of Illinois Press, 1958), p. 105.

[27] Oscar Lewis, *Village Life in Northern India: Studies in a Delhi Village* (Urbana: University of Illinois Press, 1958).

[28] Ibid., pp. 109–10.

productivity, the greater the amount of stratification."[29] Concentration is of concern because it may have long-term adaptive consequences for human communities.

An example showing concentration of wealth with development comes from Firth's work among Malay fishermen of Kelantan. Firth did fieldwork among the Kelantan fishermen in 1939–40, 1947, and 1963.[30] During each of these time periods, he observed change from a relatively unmechanized lift-net and gill-net fishery to a more mechanized purse-seine fishery.

One change was an increase in the energy capture used for fishing. More motorized vessels and mechanized gear were used. This resulted in fewer people having a share of the capital resources needed for fishing. Ownership of nets and boats declined between 1940 and 1963. Those without these capital resources increased from one-third to nearly two-thirds of the fishermen having no interest in either net or boat.

Firth also provides data on change in the shares for lift-net earnings in 1940 and seine earnings in 1963 (table 4). These, too, indicate mechanisms toward concentration of wealth. Loss of capital to prosecute the fishery affected incomes. The average daily wage in 1963 actually declined from 1940 (table 4). Firth summarizes his results: "There is little doubt that during the last thirty years the position of the peasant in Kelantan has tended to change, particularly in the direction of greater differentiation in levels of wealth. . . . Much greater returns to fishing in modern conditions, accompanied by or resulting from much greater capitalization, has resulted in a marked drop in the percentage of earnings going to labour."[31]

A case enabling measurement of change in distortion and concentra-

TABLE 4

CREW SHARE AND INCOME, KELANTAN FISHERMEN, 1940 AND 1963 (%)

Item	Lift Net 1940	Purse Seine 1963
Variable costs.....	10	25
Fixed costs.....	26	40
Juru sĕlam.....	1.5	3
Crew share.....	62	32
Average share ($).....	4/day/man	3/day/man

SOURCE.—Raymond Firth, *Malay Fishermen: Their Peasant Economy* (London: Routledge & Kegan Paul, 1946), pp. 246, 320; for similar results see Thomas M. Fraser, Jr., *Fishermen of South Thailand: The Malay Villagers* (New York: Holt, Rinehart & Winston, 1966), p. 11.

[29] Marshall D. Sahlins, *Social Stratification in Polynesia* (Seattle: University of Washington Press, 1958), p. 250.

[30] Raymond Firth, *Malay Fishermen: Their Peasant Economy* (London: Routledge & Kegan Paul, 1946).

[31] Ibid., p. 296.

tion is Pelto's analysis of the Skolt Lapp community of Sevettijärvi.[32] This community of 50 families "up to 1960 was basically that of an egalitarian society."[33] The snowmobile, along with other technological inputs like chain saws, brought about "visible economic stratification."[34]

Fishing and reindeer herding were the primary economic activities. Some Sevettijärvi families also engaged in wage labor. The Skolt Lapps "considered themselves reindeer herders above all."[35] Reindeer ownership was compared by Pelto for 1958, before the snowmobile, and 1971, when Sevettijärvi had 70 snowmobiles. For 35 reindeer-herding households Pelto found that "reindeer herds diminished sharply during the years of the 'snowmobile revolution.' "[36] Table 5 shows the change in distortion and concentration in reindeer ownership. One household ended up owning 31% of the total herd in 1971. In 1958, the household with the most reindeer owned 7% of the total herd.

Pelto used a scale for determining "material style of life." This scale is constructed by counting household ownership of items such as chain saws, snowmobiles, and telephones. Pelto's conclusion is, "The families with greater material resources and greater access to local wage-labor jobs are also the most successful in reindeer husbandry."[37] The snowmobile revolution in Sevettijärvi produced greater distortion and concentration in the distribution of reindeer.

Epstein's comparison of two South Indian villages similarly indicates concentration with development. Comparing Wangala, an irrigated village, with Dalena, a dry village, Epstein found that "real daily wage rates have been about halved between 1955 and 1970 while employment per labourer has declined. Official reports admit that . . . there has been a 14 percent decline in real wage rates in the five years between 1962 and 1967."[38] The cause of these declines is concentration of land and substitution of "ma-

TABLE 5

SKOLT LAPP REINDEER OWNERSHIP COMPARISON BEFORE AND AFTER INTRODUCING SNOWMOBILES

	Presnow-mobile, 1958	Postsnow-mobile, 1971
Distortion (skew).....	1.1	4.6
Concentration (kurtosis).....	.9	22.0

SOURCE.—Pertti J. Pelto, *The Snowmobile Revolution: Technology and Social Change in the Arctic* (Menlo Park, Calif.: Cummings Publishing Co., 1973), p. 119.

[32] Pertti J. Pelto, *The Snowmobile Revolution: Technology and Social Change in the Arctic* (Menlo Park, Calif.: Cummings Publishing Co., 1973).

[33] Ibid., p. 26.

[34] Ibid., p. 177.

[35] Ibid., p. 23.

[36] Ibid., p. 119.

[37] Ibid., p. 212.

[38] Epstein (n. 1 above), p. 260.

chinery for brawn." Those peasants with the biggest wet landholdings benefited most, and landless peasants were worse off. Similar conclusions were reached by Ladejinsky for North India where the impacts of the green revolution were greater.[39]

While these data are not conclusive, they raise questions as to who benefits from development. Community studies by Cancian in a Mayan community, of Gorokan business leaders in New Guinea by Finney, and of Shand and Straatmans's comparison of four New Guinea communities provide details on how development benefits are captured and concentrated by a small group of entrepeneurs.[40]

A hypothesis favoring inequitable concentrations of wealth is that this is only a phase in development.[41] Those who become wealthy use their wealth in capital expenditures which create jobs for the rest of the population. Salisbury's study of the economic consequences of technological change in New Guinea shows that most investments were for consumer goods, and few were for producing capital goods.[42] Firth shows that the same process occurred among the Maori.[43] In fact, not only did the wealthy purchase consumer goods produced outside the society, but the Europeans took land needed by Maori agriculturalists, and the Maori then became dependent on the capital owned by Europeans for their livelihood. Belshaw reports the same sequence for Eastern Melanesia.[44] The Bohannans found in Africa that the Tiv sold their land and used the money to purchase luxury items produced outside the society.[45]

Policies favoring more egalitarian distributions of wealth can operate against pressures for wealth concentration. Davis's data from the Italian peasant village of Pisticci show that improved equality, although slight,

[39] Wolf Ladejinsky, "Agrarian Reform in Asia: The Green Revolution and Its Reform Effects," in *Technical Change in Asian Agriculture*, ed. R. T. Shand (Canberra: Australian National University Press, 1973), pp. 235–58.

[40] Frank Cancian, *Change and Uncertainty in a Peasant Economy: The Maya Corn Farmers of Zinacantan* (Stanford, Calif.: Stanford University Press, 1972); Ben R. Finney, *Big-Men and Business: Entrepreneurship and Economic Growth in the New Guinea Highlands* (Honolulu: University of Hawaii Press, 1973); and Richard T. Shand and W. Straatmans, *Transition from Subsistence: Cash Crop Development in Papua New Guinea* (Port Moresby: New Guinea Research Unit, Australian National University, 1974).

[41] This is related to the U-shaped hypothesis, attributed mainly to Simon Kuznets, who pointed out that in the early stages of economic development income distribution initially becomes more unequal. Sherman Robinson ("A Note on the U Hypothesis Relating Income Inequality and Economic Development," *American Economic Review* 66 [June 1976]: 437–40) shows that with two sectors in a developing country's economy and without explicit countervailing policies, the country "will have increasing or unchanged income inequality for a relatively long period."

[42] Richard F. Salisbury, *From Stone to Steel: Economic Consequences of a Technological Change in New Guinea* (New York: Cambridge University Press, 1962).

[43] Raymond H. Firth, *Primitive Economics of the New Zealand Maori* (New York: E. P. Dutton & Co., 1929).

[44] Cyril S. Belshaw, *Changing Melanesia: Social Economies of Culture Contract* (Melbourne: Oxford University Press, 1954).

[45] Paul and Laura Bohannon, *Tiv Economy* (Evanston, Ill.: Northwestern University Press, 1968).

occurred despite population growth.[46] Pisticci population more than doubled between 1861 when it was 6,597 and 1961 when it was 14,847. Land distribution for 1814 and 1946 is shown in table 6. In Pisticci communal lands were divided and distributed to peasants. Several factors prevented the concentration of these lands in the hands of a few. Inheritance practices forced subdividing of some large holdings. The 1950 agrarian reform redistributed 9% of the land. These parcels came primarily from larger holdings. Further, the threat of the Reform Board led large landowners to divide their estates among children to avoid the possibility of expropriation.

Some data indicate that population growth is more manageable when wealth distributions are considered. Studies for several developing countries indicate that policies for more equitable distributions can slow population growth.[47] Two simulation models show that reduced concentration is possible in a relatively short time and may not have the negative relationship with growth that is assumed. Yunker concludes from the "World Economic Equalization Program," "The results from this simulation model clearly suggest that very substantial equalization *could* be achieved, over a relatively *limited* period of time and *without* imposing

TABLE 6

PISTICCI LAND DISTRIBUTION BEFORE AND AFTER LAND REFORM

SIZE OF PRIVATE PROPERTIES (Acres)	LAND DISTRIBUTION	
	1814	1946
0–10	7%	23%
10–100	9%	23%
100–200	5%	11%
200–500	8%	13%
500–1,000	14%	14%
1,000+	56%	16%
Land in private ownership	53%	88%
Land in public ownership	47%	12%
Distortion (skew)	7.8	4.6
Concentration (kurtosis)	62.6	20.7

SOURCE.—J. Davis, *Land and Family in Pisticci*, London School of Economics Monographs on Social Anthropology, no. 48 (New York: Humanities Press, 1973), pp. 74, 76.

NOTE.—Total area is approximately 25,000 acres.

[46] J. Davis, *Land and Family in Pisticci*, London School of Economics Monographs on Social Anthropology, no. 48 (New York: Humanities Press, 1973).

[47] Robert A. Hackenberg, "Social Inequality, Social Mobility and Population Growth in Davao City, Philippines," mimeographed (Davao City: Davao Action Information Center, 1974); James E. Kocher, *Rural Development, Income Distribution, and Fertility Decline* (New York: Population Council, 1973); William W. Murdoch and Allan Oaten, "Population and Food: Metaphors and the Reality," *Bioscience* 25 (September 1975): 561–67; and W. Rich, *Smaller Families through Social and Economic Progress* (Washington, D.C.: Overseas Development Council, 1973).

excessive and intolerable sacrifices on the population of richer regions."[48] For Mexico, Stewart shows that income redistribution "might enhance the rate of growth slightly when the country is operating under a trade constraint."[49]

Conclusions

Community data for societies at different levels of economic development and societies undergoing economic development show that egalitarian distribution of wealth is counter to the general pattern of development. This hypothesis is tested in two ways. One is in the evolutionary comparison of communities in tribal and state societies. States with economies based on intensive agriculture are more economically developed than tribal societies. Tribal communities are shown to be generally more egalitarian than communities in state societies. The second test is with economic development case studies. These show greater inequality with development. Benefits do not trickle down as assumed in the model of "benign neglect," a model whose view is that "the world economy parallels the utilitarian economist's view that the invisible hand works to promote universal well-being."[50]

These results are based on community comparisons, yet the findings parallel those of numerous other studies.[51] Analyses supported by the World Bank and other studies reaching similar conclusions take a more macro, country-level perspective, and they focus on income rather than wealth. Kuznets points out how demographic characteristics such as size may affect these country-level analyses.[52] For the community studies used, households were the basic unit of analysis. Another difference between the research design used for comparison of community wealth distributions and other studies reaching similar conclusions is a concern with the shape of frequency distributions. Rather than convert wealth distributions into percentiles and use these or Gini coefficients, also based on percentages of income going to various percentiles, measures of distortion and concentration are used. Measures of central tendency, such as mean and variance, are inadequate for describing the shape of well-being distributions. Distortion and concentration measures based on skew and kurtosis show the lognormal shape of wealth distributions. In a lognormal distribution of

[48] James A. Yunker, "A World Economic Equalization Program: Results of a Simulation," *Journal of Developing Areas* 10 (January 1976): 177.

[49] John R. Stewart, Jr., "Potential Effects of Income Redistribution on Economic Growth: An Expanded Estimating Procedure Applied to Mexico," *Economic Development and Culture Change* 26 (April 1978): 484.

[50] Jagdish N. Bhagwati, *The New International Economic Order: The North-South Debate* (Cambridge, Mass.: M.I.T. Press, 1977), pp. 2–3.

[51] Adelman and Morris; Chenery et. al.; Epstein; Myrdal; Hollis Chenery and Moises Syrquin, *Patterns of Development, 1950–1970* (London: Oxford University Press, 1975); and John A. Edelman and Hollis B. Chenery, "Aid and Income Distribution," in Bhagwati, pp. 27–49.

[52] Kuznets, pp. 88–94.

community wealth by household, most households fall below the average. Only a few have well-being measured well above average.

In tribal communities, wealth distributions approach more closely the shape of a normal distribution. For peasant communities in state societies, wealth distributions are more lognormal. State societies are hierarchical. In order to reward each level in a hierarchical society, a multiplication of benefits at each level is required. Multiplication of differences produces a lognormal distribution in which only a few do much better than the average. Economic development, left unconstrained with mechanisms to assure equitable distributions at all levels, produces benefits most effectively for upper levels in the hierarchy.

Adelman and Robinson summarize data from a Korean case study. They characterize the economic development process as one where "the basic path is one of rapid growth and steadily deteriorating income distribution,"[53] and that "the distribution of income is firmly rooted in the structure of the economy."[54] In order to improve income distributions, Adelman and Robinson show that "structural change is required to affect inequality, and the equity objectives must shape choice of basic economic development strategy."[55] They note that "it is much easier to make the income distribution worse than to improve it."[56]

Cases were found where the general trend toward greater inequality in hierarchical communities was reversed. Cultural attitudes promoting profit maximization made tribal wealth distributions nonegalitarian. Attitudes favoring equality made peasant community distributions more egalitarian.

To change the basic development path, strong cultural commitment to equality is necessary. Commitment has to be such that a programmatic rather than piecemeal approach is taken to promote greater equality. Communities with strong cultural commitment were able to change the general pattern of wealth concentration toward greater equality.

Equality does not occur by any natural economic process short of returning to tribal communities. Equality goes against the basic patterns of general evolution and development where hierarchical societies prevail. Service states, "Authority and equality must be incompatible, since true authority rests on hierarchy."[57] If greater equality is to be achieved, it needs to be a basic goal of economic policy, a goal rooted in cultural traditions promoting economic equality.

[53] Irma Adelman and Sherman Robinson, *Income Distribution Policy in Developing Countries: A Case Study of Korea* (Stanford, Calif.: Stanford University Press, 1978), p. 189.

[54] Ibid., p. 198.

[55] Ibid., p. 17.

[56] Ibid., p. 191.

[57] Service (n. 3 above), p. 53.