

IV. DISTRIBUTIVE FEATURES

9. CONSUMPTION: A REPORT ON CONTEMPORARY ISSUES

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IN A VERY broad sense all that is required to upgrade the economic well-being of everyone in American society is an expanding economy supplemented by selective policies to overcome economic hardship. Living standards could be improved for all households if growing incomes were provided. For the poor, increases in income and earning capacity would mean more nutritious and varied foods, improved health care, upgraded housing, and better education for their children. Even for families well above a poverty line, much of the growth in incomes could be expected to be used to upgrade these basic necessities.

The proportion of income used to acquire personal possessions, and to enjoy travel and recreation, has been shown to rise with generally rising incomes, while for increases into the uppermost levels of income the shares going for accumulation of investments of many types expands even more. Finally, a growing economy provides the resources for increased provision of a wide variety of public goods and services.

This familiar and very broad description of consumption in a growing economy and in an egalitarian-oriented society should be kept in mind as a fundamental background to this chapter. In the forefront, however, is a sharper focus on certain issues in American society which seem at this juncture to require resolution.

What are these issues and what quantitative measures are useful in appraising social change in these areas?

In this chapter we focus on three broad issues:

First, the American economy has reached general levels of prosperity that are unparalleled in time and among the countries of the world. The expectation that marked growth in the physical and cultural resources available to consumers will continue, barring widespread war and destruction, appears at this juncture to be unquestioned.

Not only is increased consumption considered a prime goal of total

economic effort—but many, if not most, features of the American pattern of consumption are believed by many observers to constitute the goal of other industrialized countries and, more distantly, the goal of developing countries. At the same time economic growth has, at least in this country, put a new focus on economic disadvantage. Poverty, absolute or relative, seen as pockets in the midst of widespread and rapidly growing prosperity may be a different phenomenon from poverty which was more widely experienced during periods of economic instability and general depression. The first issue, then, is assessing the severity of economic disadvantage, and the extent to which it is changing.

Second, choice has always been an important issue for households. Choice of vocation, location of job, size of family, selection of goods of desirable quality and price, choice of profitable investments—all these have in some sense always been important in relatively advanced societies. Two developments have heightened, on the one hand, and diminished or altered, on the other hand, this problem of choice.

1. The problem of personal choice has been complicated by the increase in the share of expenditures or time requiring specialized knowledge and discretion, particularly in connection with the growth over a long period in tangible possessions, in financial investments, in the use of credit, in the decrease in working time, in the lengthening of the life span, and in the rapidity with which occupations may become obsolete during one's working lifetime.
2. At the same time there has been a decline in the range of individual discretion, resulting largely from the increase in the size of government activity. The proportion of personal income subject to individual discretion has diminished somewhat because of increases in taxes and increases in the size of consumption collectively provided, and the area of public choice has widened.

To illustrate the general problem posed by these two developments, this chapter will provide statistical measurements of only a limited number of the changes which they reflect. Specifically:

1. The general nature of growth in income, consumption, and assets with adult maturation;
2. The general growth in consumer investment, mostly tangible;
3. The changing role of the government sector as it affects consumption and the choices these imply.

The third and last issue for this study we discuss only briefly, although it has dominated discussion of consumer behavior at least since the time of Keynes. This concerns the study of consumer behavior as it affects the economy—essentially studying those facets of consumer demand that are particularly relevant for production. Our intention is not to tackle this subject in any sense of completeness but to focus on one feature, namely, that changes in the timing of consumer investment decisions, particularly for durable goods, such as an automobile, accentuate fluctuations in the economy. The task here is to improve our understanding of this process so that we may better anticipate such oscillations in consumer behavior and hopefully moderate their effects.

These three issues (the term “issue” indicates that they are unsolved problems rather than clear-cut goals) cover a very broad spectrum, and will require many measurements for appraising the extent to which the issues are moving toward resolution.

We define, for the moment, consumption in a very broad sense, to include all that persons and families purchase or acquire, in order to maintain their existence, to increase their earning power (or economic aspirations), and to obtain cultural and recreational opportunities. In a strict sense, *consumption* can be defined as immediate satisfaction, *income* as the financing of consumption and investment, and *investment* as contributing to future income and consumption. We believe, however, that immediate satisfactions are an abstraction and cannot be easily disentwined from income and investment.

For this reason the chapter deals with the processes of income, consumption, and investment, rather than consumption per se. Moreover, the chapter emphasizes the need to see these processes over a life span of personal and familial maturation. This involves evaluating for different groups of young and old the interplay of streams of earnings, of changing patterns of consumption together with investments which in varying degrees are fulfilled or thwarted.

The chapter only very partially provides the details of quantitative measurement required for a continued appraisal of social change in this area. While data on income and consumption and to a lesser extent investment are abundant, we have not attempted to present them all. Moreover, in one area, which this inquiry insists deserves great emphasis—namely, the study of the life span of the household—the data are rather meager.

As a final introductory comment, while consideration must be given to the role of publicly provided goods and services as well as other

public activities directly affecting consumption, this broad area is not separately emphasized (however fundamental it may be in another context) but is brought in at various junctures to indicate its relevance to the three issues delineated earlier.

GROWTH IN THE TOTAL ECONOMY

For everyone's real income and consumption to grow, the total economy (and hopefully its productivity) must rise faster than the increase in population. Whatever measurements are employed to gauge improvements in consumption levels, a *starting* point should show basic aggregates of total economic performance, then proceed to more critical dissection, and possibly to come back again to broad aggregates if we are fortunate enough in finding new ones.

Our aim at this point is to indicate in simple terms, the growth in the total economy as measured by Gross National Product (GNP) and how that has been translated into a growing volume of goods and services, in total and per capita. This growth is summarized in the two panels in Figure 1. (Data on which the figure is based are given in Reference Table A at the end of the chapter.)

The unmistakable upward trends—in production, productivity, and in the flow of goods and services to consumers—are shown in this figure. Since the beginning of this century, as the left panel indicates, Gross National Product, in dollars of constant purchasing power had grown over the two-thirds of a century eightfold, or an increase of about 3.2 per cent per year compounded.¹ This growth has been accomplished with lessened effort. As the bottom panel of the figure shows, product per man-hour has more than quadrupled over the period, rising at a rate of 2.3 per cent per year.

The total volume of goods and services purchased by persons and families (also in constant prices), shown in the right panel of the figure, has paralleled the increase in GNP, while in per capita terms, the growth has been from about \$630 to \$2,306, a rise of 3.7 times or about 2. per cent per year. Note that this rise is almost parallel but not quite as marked as the rate of growth in productivity mentioned earlier.

Shown in the bottom panel is the percentage in total GNP that the economy provided for personal consumption. Personal consumption expenditures now constitute 63 per cent of GNP. The share was as low as 56 per cent in World War I, and 46 per cent in World War II. It was as high as 83 per cent in the depth of the Depression. But a

straight line through the fluctuations would show up as a horizontal level of approximately 63 per cent. As is well known, these are the purchases in the market, but also include estimates of the rental value of owner-occupied housing, of food made and consumed on farms, and of services provided by financial intermediaries for which no express charge is made. Excluded are illegal transactions (e.g., a large fraction of the "food and beverage" consumption component during Prohibition) and production within the household, including cooking, baking, sewing, home repair, parent tutoring, home entertainment—each of which could be purchased in the market, but is not traditionally part of measured GNP.

The significance of these broad measures for a study of social change is that they portray the necessary conditions for well-being. As a set of necessary conditions, their meaning is clear—they show that the economic base, by growing and by continuing to devote a large (but secularly constant) share to personal consumption, provides the resource base for meeting the objectives of health of body, economic security and growth, and cultural and recreational opportunities.

These measures have another meaning in the *welfare* sense. That is, in order for any person or group to receive some improvement without requiring some sacrifice from others, the total economy must grow. But this too is only a necessary condition. To determine whether in fact the fruits of economic growth are distributed in a manner "adequately" to meet the three aforementioned objectives for all persons and families, an examination of persons and families, of goods and services, must be made in many dimensions.

MEASURES OF THE INEQUITIES OF ECONOMIC GROWTH

One broad question to ask is whether, simply in the course of economic growth, there can be a significant reduction in the number of poor people—even granting that the rewards of economic growth are inequitably distributed. An interesting attempt to measure this effect was made by L. E. Galloway.² By relating the percentage of families in poverty, as defined by the well-known Social Security standard, to the growth in total incomes he projected a decline in the incidence of poverty from around one-fifth of all families in the mid-1960's to 4 per cent by 1980.

This need not imply that policies to promote total economic growth suffice to resolve the issue of economic disadvantage. First, the process

FIGURE 1. GROSS PRODUCT, PRODUCTIVITY, AND CONSUMPTION, 1900-1965

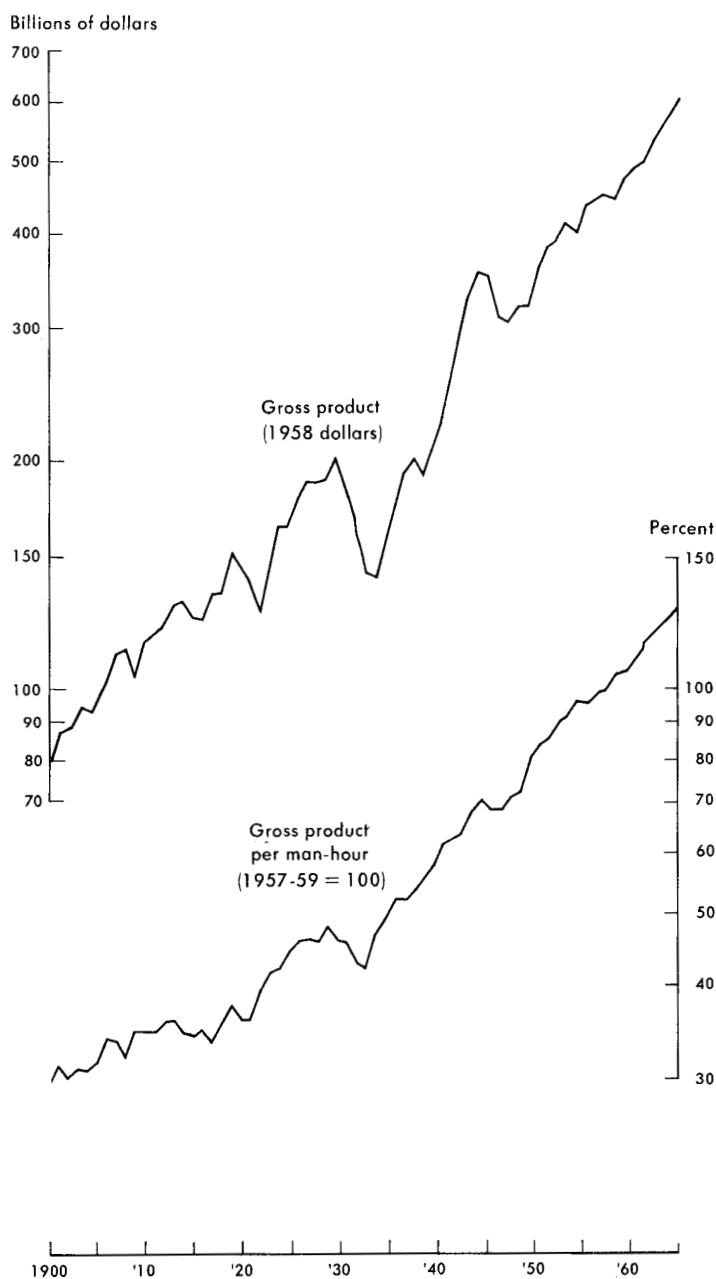
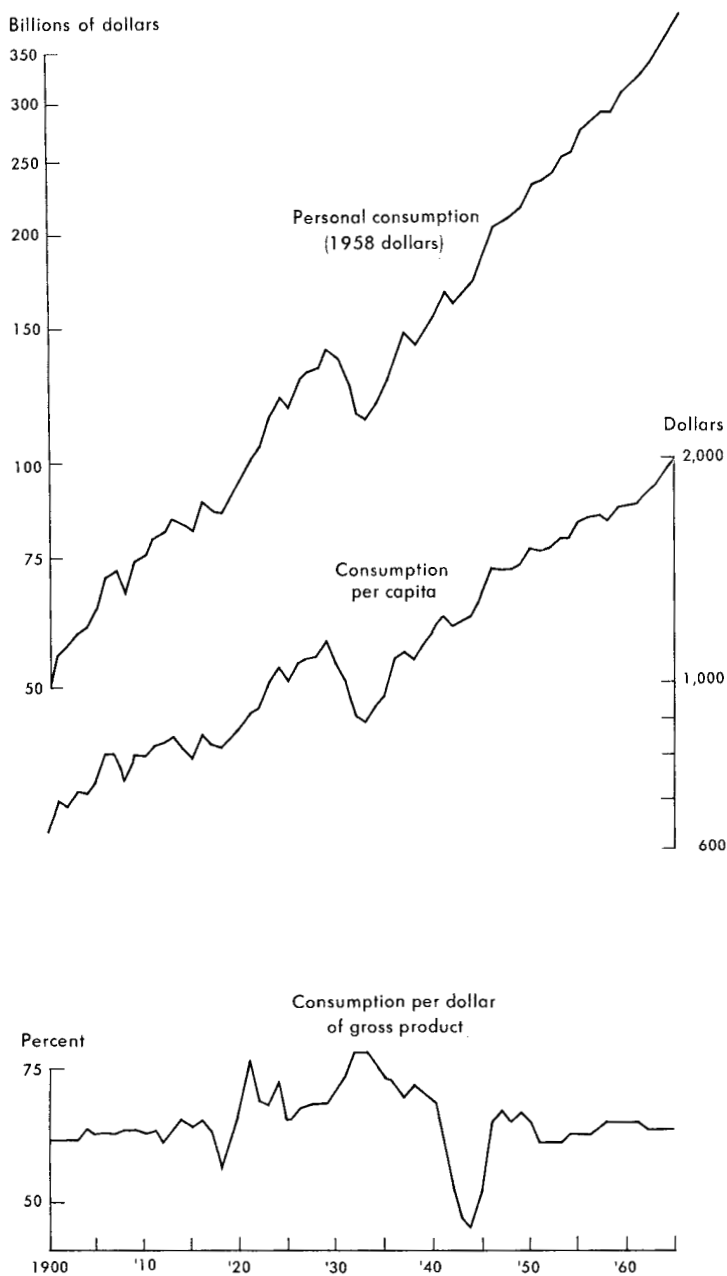


FIGURE 1. GROSS PRODUCT, PRODUCTIVITY, AND CONSUMPTION, 1900-1965 (cont.)



NOTE: This chart is plotted on a ratio scale.

SOURCES: See notes to Reference Table A, pp. 518-519.

may be regarded as much too slow. Second, some of the features of economic disadvantage (not necessarily taken into account in a fixed standard measure of poverty) may not be eradicated by economic growth.

Economic growth generally provides growing income for nearly everyone, if the growth is at least as fast as the growth in the number of people available for jobs. In fact, it particularly helps the poor in the sense that a failure of the economy to grow, as in a recession, generally affects the unskilled, uneducated worker more than others. A strongly rising economy benefits the poor more than one rising less strongly.

Our purpose in this section is to discuss various measures of poverty—or, more broadly, economic disadvantage. The intent is not, of course, to range over the entire field of poverty research so much as to show the bearing of some of these measures on an improved evaluation of consumption goals. We deal with measures of the number in a disadvantaged position and measures of the “nature of that disadvantage.”

The Incidence of Poverty

Our main interest at this point is merely to show first, that in terms of a fixed standard, say, a given income for a family of a given size, in constant purchasing power there has been a decline in the incidence of poverty. Second, in terms of the simplest of relative standards which relates the lowest incomes to the middle incomes, there has not been such a decline.

As Table 1 shows, using the fixed standard, the number and percentage of persons in families and unrelated individuals in poverty declined significantly between 1959 and 1966. In terms of constant purchasing power, persons having the equivalent income of \$3,130 or less for a nonfarm family of four members declined to 15 per cent of all persons—a drop of seven percentage points in the seven-year span shown. A much bigger decline in poverty has taken place for white persons than for nonwhites. These findings are quite familiar by now and are mentioned only as background for our presentation of the general problem.

Increasing attention has been given over the years to the concept of relative deprivation.³ This is a difficult concept—because the reference point, or group, cannot always be clearly specified. Nevertheless, it is worth serious consideration because all standards are relative in time and place and some measures along this line should be examined.

TABLE 1. INCIDENCE OF POVERTY BY COLOR, 1959-1966

Year	Number of persons			Number in poverty			Percentage in poverty		
	Total	White	Non-white	Total	White	Non-white	Total	White	Non-white
	(in millions)								
1959	176.5	156.9	19.6	38.9	28.2	10.7	22.1	18.0	54.6
1961	181.4	160.4	20.9	38.1	26.5	11.6	21.0	16.5	55.4
1963	187.2	165.2	22.0	35.3	24.1	11.2	18.9	14.6	50.9
1965	191.5	168.9	22.7	31.9	21.4	10.5	16.7	12.7	46.4
1966	193.4	170.2	23.2	29.7	20.1	9.6	15.4	11.8	41.4

SOURCE: Condensation of Table H in "Income in 1966 of Families and Persons in the United States," *Current Population Reports*, Series P-60, no. 53, U.S. Bureau of the Census, December, 1967. The definition of poverty in this table is that now officially current, and was developed by Mollie Orshansky, taking as its base the Level 1 definition scaled roughly to an income of \$3,000 for a family of four.

Note that figures in this table refer to persons rather than households. In 1966 there were 10.3 million nonfarm households, and 0.6 million farm households in poverty according to the Social Security Administration definition, or 17.6 and 20.8 per cent, respectively, of the total number of households. These percentages were down from 22.5 and 40.9 in 1959. See *Economic Report of the President*, February, 1968, p. 143.

TABLE 2. PERCENTAGE OF U.S. FAMILIES
CLASSIFIED AS POOR BY RELATIVE AND
ABSOLUTE STANDARDS, 1947-1960

Year	Median income (1959 dollars)	Percentage of families with income		
		Less than one-half the median ^a	Less than \$3,000 (1959 prices)	Less than \$2,000 (1959 prices)
1947	3,957	19.0	33.9	19.1
1948	3,868	19.4	34.7	19.8
1949	3,807	20.1	35.9	21.3
1950	4,036	20.0	33.0	19.8
1951	4,164	19.0	30.9	17.9
1952	4,277	19.0	29.3	17.8
1953	4,627	19.9	27.1	16.8
1954	4,530	20.7	28.7	18.1
1955	4,817	19.9	25.9	16.0
1956	5,129	19.5	23.6	14.2
1957	5,148	20.0	23.5	14.2
1958	5,143	19.9	23.8	14.1
1959	5,417	19.9	22.7	13.4
1960	5,547	20.2	22.1	13.2

^a Estimated by interpolation.

SOURCE: Fuchs, Victor R., "Toward A Theory of Poverty," in Task Force on Economic Growth and Opportunity, *The Concept of Poverty*, Chamber of Commerce of the United States, Washington, 1965; reprinted in Miller, S. M., M. Rein, P. Roby, and B. M. Cross, "Poverty, Inequality, and Conflict," *The Annals of the American Academy of Political and Social Science*, September, 1967.

We start by showing data in Table 2 representing a broad measure of relative disadvantage presented by Victor Fuchs. The important point stressed here is that relative to some fraction (say half) of income in the middle position of U.S. families, the proportion of families with incomes less than that fraction has remained constant.

An alternative view of the same phenomenon is shown in Table 3. This measure has the advantage of avoiding Fuchs' need to resort to interpolation, and is brought forward to 1964. Also the data are based on current dollars rather than 1959 dollars. Constant dollar data are redundant for purposes of this measure inasmuch as deflation of all incomes by the same price index leaves unaffected the ratio of median to bottom fifth income.

As shown in this table, the top limit of income received by the families in the lowest fifth of the income distribution remained at close to

TABLE 3. INCOMES OF THE LOWEST FIFTH
COMPARED WITH THE
MEDIAN INCOME OF FAMILIES
IN THE UNITED STATES, 1947-1964

Year	Lowest fifth	Median	Ratio to median
(current dollars)			
1947	1,580	3,031	.52
1948	1,656	3,187	.52
1949	1,540	3,107	.50
1950	1,665	3,319	.50
1951	1,959	3,709	.53
1952	2,052	3,890	.53
1953	2,132	4,233	.50
1954	2,018	4,173	.48
1955	2,228	4,421	.50
1956	2,451	4,783	.51
1957	2,491	4,971	.50
1958	2,564	5,087	.50
1959	2,713	5,417	.50
1960	2,798	5,620	.50
1961	2,829	5,737	.49
1962	3,018	5,956	.51
1963	3,150	6,249	.50
1964	3,279	6,569	.50

SOURCES: The income figures for the lowest fifth represent the upper limit of that group. Data are calculated from "Consumer Income," *Current Population Reports*, Series P-60, no. 53, Table G; and Henson, Mary F., "Trends in the Income of Families and Persons in the United States, 1947-1964," Technical Report No. 17, U.S. Bureau of the Census, Washington, 1967.

one-half the median income of all families throughout the post-World War II period.

The measure of relative disadvantage, *ceteris paribus*, can be sharpened further by controlling for the differences that are due to age, as shown in Table 4 for the years 1964, 1957 and 1947. This table provides essentially the same income data as in Table 3 for the relevant age groups.

For most groups income in the lowest quintile of the given age group is approximately half of the average income for the same group. In the oldest group the ratio is much lower, however, indicating that the relative deprivation in the oldest ages tends to be greatest. This is also consistent with the finding that inequality in income size distributions tends to be greatest for the aged. Between 1947 and 1964 there appears to have been some improvement for this group

though the "deprivation ratio" has apparently remained quite low. Moreover, other measurements are needed before one can determine any significant change in the economic status of the aged. We note parenthetically that our interest at this point is in focusing on the lowest end of the income distribution rather than in the degree of general inequality or dispersion of all incomes. For this reason we have not used the more familiar measures of inequality (for example, the Gini ratio) which, like the standard deviation or coefficient of variation, are really measures of general dispersion—not measures of poverty.

Based on these relative measures the lowest income recipients have neither lost nor gained ground in the growth of the economy.⁴ Based on an absolute standard such recipients have gained ground. The different trends shown by the absolute and relative standards are consistent in the sense that with a growing economy, if no change occurs in group-to-group disadvantage then, by the process of income growth, all groups (advantaged and disadvantaged) must have grown in relation to some fixed income standard.

It is difficult to deny that with a general rise in real income there is also some upgrading in standards, suggesting that a relative standard may be preferable to a fixed one particularly if economic growth is rapid. The nature and extent of the upgrading among different groups—the poor, the middle-income, and the rich—are not known. Some evidence on upgrading in some average sense, however, is suggested, if not demonstrated, in the work of the U.S. Bureau of Labor Statistics (BLS) in their special budget studies. The most recent, dealing with the City Worker's Family Budget, illustrates the upgrading process.⁵ In this study an attempt was made to compare changes for renter families in the cost of a standard budget resulting from price changes and from consumption standards per se. According to this study the total cost of a moderate standard of living for the four-person family averaged about \$4,200 in 1951, and \$8,700 for all renter families covered. These increases in the level of total budget costs reflect increases in federal, state, and local income taxes and Social Security taxes as well as the rise in prices and in the upgraded standard of living. In an effort to separate these component sources of change in cost, BLS found that in the fifteen-year span from 1951 to 1966 the increase in total cost was attributable to a 40 per cent increase in price and a 50 per cent increase in the standard. This increase in the standard compares with a rise of 78 per cent in disposable personal income, after correction for price change.

While the procedure used by BLS to obtain a changed standard

TABLE 4. RELATION BETWEEN LOWEST AND MEAN INCOMES OF
U.S. NONFARM FAMILIES, BY AGE, 1964, 1957, AND 1947

Age group	1964			1957			1947		
	Lowest quintile	Mean	Ratio	Lowest quintile	Mean	Ratio	Lowest quintile	Mean	Ratio
Total	3,279	7,438	.44	2,491	5,483	.45	1,580	3,566	.44
14-24	2,675	4,975	.54	2,250	4,041	.56	1,361	2,425	.56
25-34	3,973	6,987	.57	3,357	5,399	.62	1,815	3,254	.56
35-44	4,512	8,323	.54	3,479	6,187	.56	1,926	3,857	.50
45-54	4,402	8,760	.50	2,930	6,306	.47	1,908	4,099	.47
55-64	3,248	7,866	.41	2,265	5,510	.41	1,541	3,795	.41
65 and over	1,831	5,269	.35	1,198	3,564	.34	689	2,848	.24

NOTE: The use of the median would have been preferable to eliminate correlation between the two income positions which is present in use of mean. However, as shown in the total column the results seem to differ only slightly compared with the preceding table in which the median was used. For age group data, only the mean figure was available in the published source.

SOURCE: Henson, Mary F., "Trends in the Income of Families and Persons in the United States, 1947-64," Technical Report No. 17, U.S. Bureau of the Census, Washington, 1967, Table D, p. 33, and Table 25, pp. 182-187.

budget is no precise demonstration of the upgrading process for a moderate position in the income scale, it does strongly suggest that the process of general income growth is accompanied by an upgrading and that it by no means exceeds the rate of general economic growth. It might be noted parenthetically that the new standard budget is some 16 or 20 per cent below the average level of living for families of the type represented in the budget (a family of four persons: an employed husband, age thirty-eight; a wife not employed outside the home; and two children, a girl eight and a boy thirteen).

Consumption Patterns and Assets of the Poor

Measures of levels of living among the poor more direct than those provided by income data are evident from information on consumption patterns; yet even these represent only broad averages and do not reveal the full range of presence or absence of acute economic hardship. Data mainly from the 1960-1961 Consumer Expenditures Survey,⁶ but also from other sources, reveal the following main conclusions of consumption patterns of families at low or the lowest income levels.

1. For such families, income understates consumption by wide margins. This is clearly shown in Table 5 where expenditures for current consumption are shown to be appreciably in excess of money receipts by percentages ranging as high as 71 per cent for a single-person family in the lowest consumption class. The large percentages by which current consumption exceeds income imply the use of assets

TABLE 5. CURRENT CONSUMPTION AS A PERCENTAGE OF MONEY INCOME, BY SIZE OF FAMILY, 1960-1961

Type of family	Percentage of after-tax income and other money receipts					
	Number of persons in family					
	1	2	3	4	5	6 or more
In "low-consumption" classes						
Current expenditures	105	105	107	113	105	99
Expenditures plus value received without expense	114	110	113	119	109	103
Under "low-consumption" classes						
Current expenditures	151	118	123	125	125	109
Expenditures plus value received without expense	171	133	137	134	135	116

SOURCE: Lamale, Helen H., "Levels of Living Among the Poor," Report No. 238-12, U.S. Bureau of Labor Statistics, Washington, August, 1965, p. 6.

or credit, the receipt of public or private assistance, gifts from persons outside the family, and insurance benefits—all of which are seen in the survey to be important resources for families at low income levels.

2. In the low-consumption classes, the percentage of total consumption spent for food varied from 27 per cent for three-person families to 31 per cent for families of six persons or more. It was as high as 34 per cent for very large families in the lowest consumption levels in the survey. These high percentages compare with an average of 24 per cent for all nonfarm families. While persons in the lowest income classes on the average spent amounts for food which were within the range of expense that the U.S. Department of Agriculture specifies as providing nutritional adequacy, the chances are that the diets in fact could be well below the standards necessary for nutritional health. The knowledge of nutrient adequacy of foods and skill in food preparation or the motivation for proper application of such skills as may be known are believed to be generally lacking among those in the lowest income levels—at least to a greater extent than those with higher incomes.

3. In 1960 about one-third of all U.S. families with incomes below the poverty line lived in housing that was dilapidated or lacked plumbing (that is, hot and cold running water or private toilet or bathing facilities inside the structure). This total is made up of some 2 million American families who live in completely dilapidated housing, that is, dwelling units with structural defects that endanger the health and safety of the inhabitants, and close to 4 million families who live in units that lack basic plumbing facilities. Data collected in the 1950 and 1960 censuses suggest a reduction in the number of occupied substandard units from 15.3 to 9.0 million units. The data shown in Table 6 indicate further improvement since 1960. The improvement in the quality of occupied housing in nonmetropolitan areas has been much more marked than in metropolitan areas. Part of this relative improvement reflects the continued migration to urban areas of poor farm families, many of whom have abandoned substandard units.

4. Prices paid by families at the lower end of the income scale averaged lower than families in the middle range of income. For example, 6 per cent of the low-consumption families bought refrigerators at an average cost of \$176 compared with an average of \$266 for the 8 per cent of families in the \$6,000 to \$7,500 class who bought refrigerators. For washing machines, the comparable figures were 7 per cent at \$140 and 9 per cent at \$197. For vacuum cleaners, 4 per cent at \$68 compared with 9 per cent at \$85. Lower average prices are of

TABLE 6. OCCUPIED HOUSING UNITS, BY QUALITY AND AREA, 1960 AND 1966

<i>Quality by area^a</i>	<i>1960</i>	<i>1966</i>
	<i>(thousands)</i>	
Standard units	44,418	52,138
Substandard units	8,469	5,754
Metropolitan areas	3,231	2,470
Nonmetropolitan areas	5,238	3,284
Dilapidated	2,353	1,995
Metropolitan areas	1,052	n.a.
Nonmetropolitan areas	1,301	n.a.
Nondilapidated, lacking plumbing	6,116	3,759
Metropolitan areas	2,179	n.a.
Nonmetropolitan areas	3,937	n.a.

^a Based on 1960 definitions of quality and metropolitan areas.

SOURCE: Department of Commerce and Department of Housing and Urban Development, as given in the *Economic Report of the President*, February, 1968, p. 150.

course to be expected. There is no evidence, though, from survey figures whether the quality of goods purchased is or is not disproportionately lower for the poor. To the extent, however, that those with low and unstable incomes include a greater proportion of families with less familiarity with retail practices and facilities (because of lack of education or other reasons) vulnerability to the possibility of overcharge may be great.⁷

Since assets might constitute an important source of consumption expenditures for those with "inadequate" incomes, some appraisal of the importance of these assets among low-income families should be noted. This brief discussion relies on information gathered in a survey of wealth conducted for the Federal Reserve Board by the Census Bureau.⁸ According to this source, most of those classified as poor on basis of income levels had little or no reserves of wealth (as of the end of 1962) but there were some with fairly sizable holdings in the form of equity in a home and/or liquid and investment assets. Were these amounts sufficiently large to alter our present notions of the number in poverty?

The survey found that four in ten units in the low-income level group were homeowners, and the mean wealth holdings amounted to \$6,200 for families and \$5,800 for one-person units. Older persons or heads of families (say, sixty-five or older) had larger amounts of wealth on the average than the younger. All in all, however, even if account were taken of these assets, and an estimate made of their in-

come yield for purposes of consumption, the survey concluded that perhaps one in seven of the families, and one in four of the one-person units classified as poor on the basis of current income would not be so classified on the basis of their wealth to supplement their income. The survey based this estimate on an allowance of 4 per cent yield on equity from home ownership *plus* liquidation of financial assets both sufficient to just overcome the gap between the poverty level and current income less indebtedness as of 1962. The data are shown in Table 7.

The survey concludes, and this writer agrees, that "As a predictable program for raising consumption levels of units with incomes be-

TABLE 7. ASSETS IN RELATION TO INCOME DEFICIENCY
FOR UNITS WITH INCOME BELOW POVERTY LEVEL 1,
DECEMBER 31, 1962

<i>Income deficiency and compensation</i>	<i>All units</i>	<i>Unrelated individuals</i>	<i>Families of 2 or more</i>
	<i>(percentages)</i>		
Units with income below Level 1 ^a	100	100	100
Deficiency compensated			
By allowance for home equity ^b	6	7	6
By allowance for home <i>plus</i> liquid and investment assets ^c			
Sufficient ^d for:			
5 years or more	13	19	9
3 years but less than 5	2	2	1
2 years but less than 3	3	4	1
1 year but less than 2	3	5	2
Deficiency not compensated			
Some liquid and investment assets ^c	13	14	12
No liquid and investment assets ^c	61	49	70

^a Level 1 is the economy level as defined by the Society Security Administration.

^b Allowance estimated at 4 per cent of equity.

^c After deduction of personal noninstalment debt and instalment debt incurred for purposes other than purchases of durable goods and home repair and modernization.

^d Liquid and investment assets sufficient to meet gap between poverty income Level 1 and 1962 money income plus allowance for a 4 per cent return on home equity.

NOTE: Details may not add to totals because of rounding.

SOURCE: Projector, D. S., and G. S. Weiss, "Survey of Financial Characteristics of Consumers," Federal Reserve Board, August, 1966.

low poverty criteria, use of accumulated savings has limits." Obviously, the amount of wealth in the hands of the poor appears inadequate to raise their living conditions for any appreciable period of time. Furthermore, most of the wealth held by those classified as poor in terms of current income is owned by the elderly. The many special situations for the elderly occasioned by differing life expectancies, individual uncertainties, and special emergencies would very likely make such a program quite difficult to administer.

At a later point we discuss patterns of asset holdings in more detail. See, for example, the discussion of Table 17, which shows the severely disadvantaged position of Negroes with respect to accumulation of assets.

Actual and Expected Earning Power

The foregoing measures pertained largely to *inequality* in income, consumption, or assets. In large degree, it is supposed that these measures of inequality imply deficiency or hardship or injustice of some sort. But of what sort? In point of fact, apart from data on housing, and possibly an *implication* of some nutritional deficiency or lack of variety in diet, there is nothing in the foregoing figures which *prima facie* implies hardship or injustice. To pursue this matter further we seek other measures which may be more pertinent to family aspirations.

First, we deal with the matter of earning power or of actual or prospective growth in income over the life span. We conjecture that growth in real income as the adult earner and the family matures is one of the most important indicators of dynamic strength in an economy and of the relative well-being of a family. We *assume* that the goal of growth in family income is widespread and that the failure to achieve or expect this growth (for social or personal reasons) is a source of acute dissatisfaction, particularly when the general economy is expanding rapidly.

It is clear that there are at least two components of this income growth with family or personal maturation. One reflects growth in the economy—if the economy grows, the income of each family or potential earner should rise with this growth. The other reflects increase in income with maturation. As a person grows older (short of retirement) one would expect his income to rise with his added experience. As with all indicators, one might object to any stringent interpretation—in this instance, the need at times to qualify the function of the age-income relationship. How much of the rise in income with age results from rules governing seniority per se and how much from increased

productivity with job training and added responsibilities is a further challenge to analysis.

The study of earning power over the life span involves essentially an examination of various data on income by age. Following in part the work done by Herman Miller,⁹ in examination of the relationship between income and age, we attempt to separate the effect of (1) the difference in income due to age in any given year, and (2) the cohort difference due to both age and the general rise in incomes. Table 8 uses cross-sectional age differences as a measure of the first effect, and cohort differences as a measure of the second effect. Since the second effect includes both the effect of aging *and* the effect of a general rise in incomes associated with economic growth, the difference between the two is an estimate of the effect of economic growth.

In this table data are shown by moving or successive decades starting with the 1947 to 1957 span and all the way to the one for 1954 to 1964. This represents additional time series data not presented by Miller. He used only the 1949–1959 decade but in considerably more detail as discussed at a further point in this analysis.

Median family income, as a result of age, *per se*, rises more sharply in the earliest stage of life shown in the table and for each cross-section except for 1949. Income rises up to the forty-five to fifty-four age range and then declines. The rise in income associated with economic growth (the difference between the data based on cross-section and on cohorts) is also quite a bit higher for the younger than for the older groups.

The families with youngest family heads showed increases (due to general economic growth) in almost every decade that exceeded the general growth in the economy as measured by GNP or disposable income in constant prices. The oldest benefited the least from economic growth. While there seems to be general stability in the age-income relationships over the years shown in the table, some discontinuity is evident, which may be more indicative of the approximate accuracy of the data than of any significant change in actual incomes. See, for example, the very small percentage changes due to age in 1951 and 1952 for the group forty-five to fifty-four compared with thirty-five to forty-four.

We discuss the income-age relationship further using more detailed data for only the 1949–1959 decade for male earners developed by Miller. Miller divided the increase in income over the 1949–1959 period into the two components described above—age and the general rise in income due to economic growth. As shown in Table 9, in

TABLE 8. PERCENTAGE CHANGES IN MEDIAN FAMILY INCOME DUE TO AGE AND ECONOMIC GROWTH,
BY DECADES, 1947-1964

Decade	GNP	Dispos- able income	25-34 to 35-44			35-44 to 45-54			45-54 to 55-64			55-64 to 65 and over		
			Age	Differ- ence	Age plus growth	Age	Differ- ence	Age plus growth	Age	Differ- ence	Age plus growth	Age	Differ- ence	Age plus growth
1947-1957	46.0	44.9	12.3	38.3	50.6	4.8	34.8	30.0	-7.3	+17.2	9.9	-42.8	-37.4	+5.4
1948-1958	38.2	38.7	9.4	41.7	51.1	4.8	38.8	34.0	-10.0	+28.3	18.3	-41.2	-31.5	+9.7
1949-1959	46.8	44.3	4.2	57.8	53.6	4.4	51.3	46.9	-9.5	+37.4	27.9	-40.0	-26.3	+13.7
1950-1960	37.3	36.3	6.8	55.0	48.2	2.5	46.6	44.1	-9.1	+32.0	22.9	-43.0	-29.5	+13.5
1951-1961	29.7	37.2	6.3	48.0	41.7	-0.2	43.3	43.5	-10.1	+34.8	24.7	-46.2	-27.8	+18.4
1952-1962	34.1	39.5	7.3	48.2	40.9	0.4	43.2	42.8	-12.7	+38.3	25.6	-40.1	-25.9	+14.2
1953-1963	33.5	38.5	5.9	41.6	35.7	5.3	40.1	34.8	-15.1	+31.4	16.3	-46.1	-29.2	+16.9
1954-1964	42.8	46.6	9.8	52.6	42.8	3.3	43.4	40.1	-15.9	+35.8	19.9	-43.4	-28.1	+15.3

NOTE: Family median income changes are calculated from data in Henson, Mary F., "Trends in the Income of Families and Persons in the United States, 1947-1964," Technical Report No. 17, Table 3, U.S. Bureau of the Census, Washington, 1967. Data are in constant prices for 1964. "Age" refers to cross-section data in the initial year of the decade and "age plus growth" to cohort data over the decade. "Difference" represents the estimated change in income due to economic growth. See Table 9 for fuller description. The "family median income" data refer to income before taxes and are therefore only broadly comparable with the aggregate measure of disposable income, which is after taxes. The aggregate figures on GNP and disposable income in the first two columns are provided for very broad comparisons between these aggregate measures of economic growth and those estimated for family median income shown under each age group and labeled "difference." GNP and disposable income are also in constant prices but pertain to 1958.

TABLE 9. CHANGE IN U.S. MALE INCOMES DUE TO AGE AND ECONOMIC GROWTH, BY COLOR AND EDUCATION, 1949-1959

Years of school completed and color	Age 25-34 and 35-44		Age 35-44 and 45-54		Age 45-54 and 55-64	
	Age ^a plus growth ^b encc	Dif-fer-ence ^c	Age ^a plus growth ^b encc	Dif-fer-ence ^c	Age ^a plus growth ^b encc	Dif-fer-ence ^c
<i>All classes</i>						
Total	24	75	51	3	40	37
Elementary, 8 yrs.	19	53	34	7	33	26
High school, 4 yrs.	24	63	39	17	38	21
College, 4 yrs. or more	76	127	51	15	35	20
<i>White</i>						
Total	25	76	51	3	39	36
Elementary	19	54	35	7	33	26
High school	24	64	40	17	38	21
College	76	128	52	15	35	20
<i>Nonwhite</i>						
Total	6	63	57	-4	39	43
Elementary	9	52	43	3	37	34
High school	11	59	48	-	36	36
College	40	103	63	6	56	50

^a Change based on ratio of income between age groups in 1949; e.g., group 35-44 had a 24 per cent higher income than the 25-34-year-olds in 1949.

^b Change based on ratio for given age group as it grew older from 1949 to 1959; e.g., the 25-34-year-olds increased their income 75 per cent as they grew older from 1949 to 1959, and as the economy grew.

^c The difference between the first two columns represents the change due to economic growth. SOURCE: Based on data from Miller, Herman P., *Income Distribution in the United States*, A 1960 Census Monograph, U.S. Bureau of the Census, Washington, 1966, Table VI-2.

1949 males between the ages of thirty-five to forty-four had a mean income 24 per cent higher than those in the group twenty-five to thirty-four. The table also shows that the group thirty-five to forty-four years of age in 1959 had a mean income 75 per cent higher than this age group had when in 1949 they were ten years younger. Over the ten-year span they increased their income, both because of the increase due to added experience with age and also because of the general growth in income of the economy. The difference, 51 per cent, may be said to be the increase resulting from economic growth. For the 1949-1959 decade it was about twice the increase due to age alone. This is equivalent to about 4.2 per cent per year compounded. The rise in total U.S. personal income (before taxes but corrected for price changes as is the census measure) over this period as estimated by the Department of Commerce was 43 per cent or at a rate of 3.7 per cent per year.

Further examination of the table shows that for each education level the young men benefited more from economic growth than the older men. For example, in the case of college graduates, the increase from 1949 to 1959 due to economic growth was 51 per cent for the group that was twenty-five to thirty-four in 1949, while the increase in incomes as a result of economic growth for the graduates who were thirty-five to forty-four in 1949 was 20 per cent by 1959. In the next age grouping shown in the table the increase due to economic growth was 18 per cent.

A higher increase due to economic growth for the young is evident for other education levels for both white and nonwhite. The familiar finding that education provides larger percentage increases in income with age for whites than for nonwhites is illustrated in this table. Thus a white college graduate in 1949 could expect on the average to increase his income by 76 per cent in about ten years in the process of maturing from age twenty-five to thirty-four to age thirty-five to forty-four. His nonwhite counterpart, based on these findings, could expect a 40 per cent rise, partly because of much less opportunity and partly because of generally poorer quality of education. The rise in later age groups while diminishing for both white and nonwhite, diminishes far less for white.

The increases due to economic growth, however, seem to tell a somewhat different story. Thus a young nonwhite college graduate in 1959 showed a rise of 63 per cent on the average due to economic growth from 1949 to 1959 compared to a 52 per cent rise for his

white counterpart. The larger percentage rise for nonwhites due to economic growth is evident in all of the age groups shown in the table.

It is also noteworthy that in the older two age spans shown, economic growth has benefited the well-educated nonwhite *in relation to the less-educated nonwhite* to a much greater extent than was true of this relationship for whites. Thus the table shows that in the thirty-five to forty-four to forty-five to fifty-four age span incomes of nonwhite college graduates grew 50 per cent from 1949 to 1959 as a result of economic growth. For high school graduates it was 40 per cent. In the case of whites for this and the next age group, there was no appreciable difference in income gain due to economic growth between high school and college graduates. In fact, the figures suggest a slightly higher rise for the high school graduates.

Note that some of those who were college graduates in 1959 may not have been in that educational status in 1949—so that there is some error in the measurement of the extent to which economic growth confers benefits on those with high educational status. A panel study—holding both the age cohorts constant and recording the shift in education status—would be needed to record the full effect of education on differences in growth of income.

Analysis by region yields results which are less clear, probably reflecting the difficulties of too much aggregation, though still suggestive of the relation between high income and growth with age. We compare the combined North and West with the South, keeping in mind that incomes of men in the North and West averaged about a third higher than in the South for whites and for the nonwhites about 2.7 times higher, according to the census statistics for 1959.

As shown in Tables 10 and 11, college graduates in the North and West in 1949 evidenced more growth in income with age than in the South. But for nonwhites the difference was less pronounced, although the drop-off in income in later years in the South for nonwhites was greater than for nonwhites in the North and West.

The general stability of the tendency for marked growth of income with age for all groups, with especially marked differences in the rate of growth for nonwhite and white, men and women, highly and lowly educated, has been evident in the averages over the ten-year spans shown in the several tables above.

The differential growth in income with maturation is of interest in comparing men and women. It seems clear from the evidence in Table 12 giving data over a period of some twenty-five years that while in-

TABLE 10. CHANGE IN U.S. MALE INCOMES DUE TO AGE AND ECONOMIC GROWTH BY COLOR, EDUCATION, AND REGION (NORTH AND WEST), 1949-1959

Years of school completed and color	Age 25-34 and 35-44			Age 35-44 and 45-54			Age 45-54 and 55-64		
	Age ^a	Age plus growth ^b	Difference ^c	Age ^a	Age plus growth ^b	Difference ^c	Age ^a	Age plus growth ^b	Difference ^c
<i>All classes</i>									
Total	25	74	49	3	39	36	-14	21	36
Elementary, 8 years	18	52	34	6	33	27	-8	19	27
High school, 4 yrs.	23	64	41	17	39	22	-3	19	22
College, 4 yrs. or more	55	134	55	15	36	21	-6	13	19
<i>White</i>									
Total	26	76	50	3	40	37	-15	22	37
Elementary	18	53	35	6	33	27	-8	19	27
High school	24	65	41	17	40	23	-3	19	22
College	79	135	56	15	36	21	-6	13	19
<i>Nonwhite</i>									
Total	8	59	51	-3	37	40	-9	25	34
Elementary	8	48	40	1	36	35	-4	24	28
High school	10	61	51	1	41	40	-11	27	38
College	48	110	62	-1	64	65	-9	45	54

SOURCE and notes: See Table 9.

TABLE 11. CHANGE IN U.S. MALE INCOMES DUE TO AGE AND ECONOMIC GROWTH BY COLOR, EDUCATION AND REGION (SOUTH), 1949-1959

Years of school completed and color	Age 25-34 and 35-44			Age 35-44 and 45-54			Age 45-54 and 55-64		
	Age plus growth ^b	Difference ^c		Age plus growth ^b	Difference ^c		Age plus growth ^b	Difference ^c	
<i>All classes</i>									
Total	18	73	58	2	39	37	-14	22	36
Elementary, 8 yrs.	17	53	36	7	33	26	-7	18	25
High school, 4 yrs.	28	58	30	16	32	16	-4	16	20
College, 4 yrs. or more	63	107	44	16	55	39	-6	9	15
<i>White</i>									
Total	21	74	53	3	38	35	-15	21	36
Elementary	17	54	37	5	32	27	-7	18	25
High school	28	59	31	16	32	16	-5	16	21
College	65	108	43	15	55	40	-6	8	14
<i>Nonwhite</i>									
Total	4	50	46	-5	30	35	-20	12	32
Elementary	7	45	38	1	32	31	-17	16	33
High school	14	47	33	-8	25	33	-10	17	27
College	29	83	54	14	49	35	-19	23	42

SOURCE and notes: See Table 9.

TABLE 12. MEDIAN INCOME OF PERSONS BY AGE AND SEX, SELECTED YEARS, 1941-1966

<i>Sex and year</i>	<i>Age group</i>					
	20-24	25-34	35-44	45-54	55-64	65 and over
<i>Men</i>						
1941	699	1,095	1,321	1,297	796	446
1951	1,855	3,004	3,219	2,887	2,315	823
1961	2,095	4,388	5,085	4,580	3,787	1,420
1965	3,191	6,007	6,714	6,363	5,250	2,116
1966	3,330	6,507	7,305	6,918	5,750	2,162
<i>Women</i>						
1941	267	278	259	291	224	240
1951	1,072	1,185	1,110	913	756	421
1961	1,130	1,309	1,494	1,515	1,034	734
1965	2,187	2,257	2,484	2,560	2,019	984
1966	2,126	2,350	2,590	2,758	2,214	1,085

SOURCES:

1941 data—Brady, Dorothy, "Age and the Income Distribution," Department of Health, Education and Welfare, Social Security Administration, Research Report No. 8, Washington, 1965.

1951, 1961—Henson, Mary F., "Trends in the Income of Families and Persons, 1947-64," Technical Paper No. 17, U.S. Bureau of the Census, Washington, 1967.

1965—*Current Population Reports*, Series P-60, no. 51, January, 1967, U.S. Bureau of the Census.

1966—*Current Population Reports*, Series P-60, no. 53, December, 1967, U. S. Bureau of the Census.

come levels are obviously higher for men than for women and the growth in income over the life span is also more pronounced, what is of particular interest is that in the earliest year shown there is no growth pattern by age for women. Even as late as 1951 the average income growth pattern shows a tapering off quite early in life. But by 1961 the shape of the growth curve (though at a lower level) is much more like those of men.

Note that for the comparisons in this table it was not necessary to correct for price changes since from one year to the next, the relation between incomes of young and older persons may change only very slightly as a result of differences in the prices of things each requires for living. It is therefore pertinent merely to examine the changing pattern from year to year in the difference in income between the younger and older persons.

A final measure discussed in this section on income and age is one which might be considered as an expectational measure. It is not ex-

pectational in the sense that it is a measure of what people *would say* or think they expect—but rather of what people might expect on the basis of past experience of persons in their broad groupings by color and education. This is the measure of lifetime earnings shown in Figure 2. (Data are given in Reference Tables B and C at the end of the chapter.)

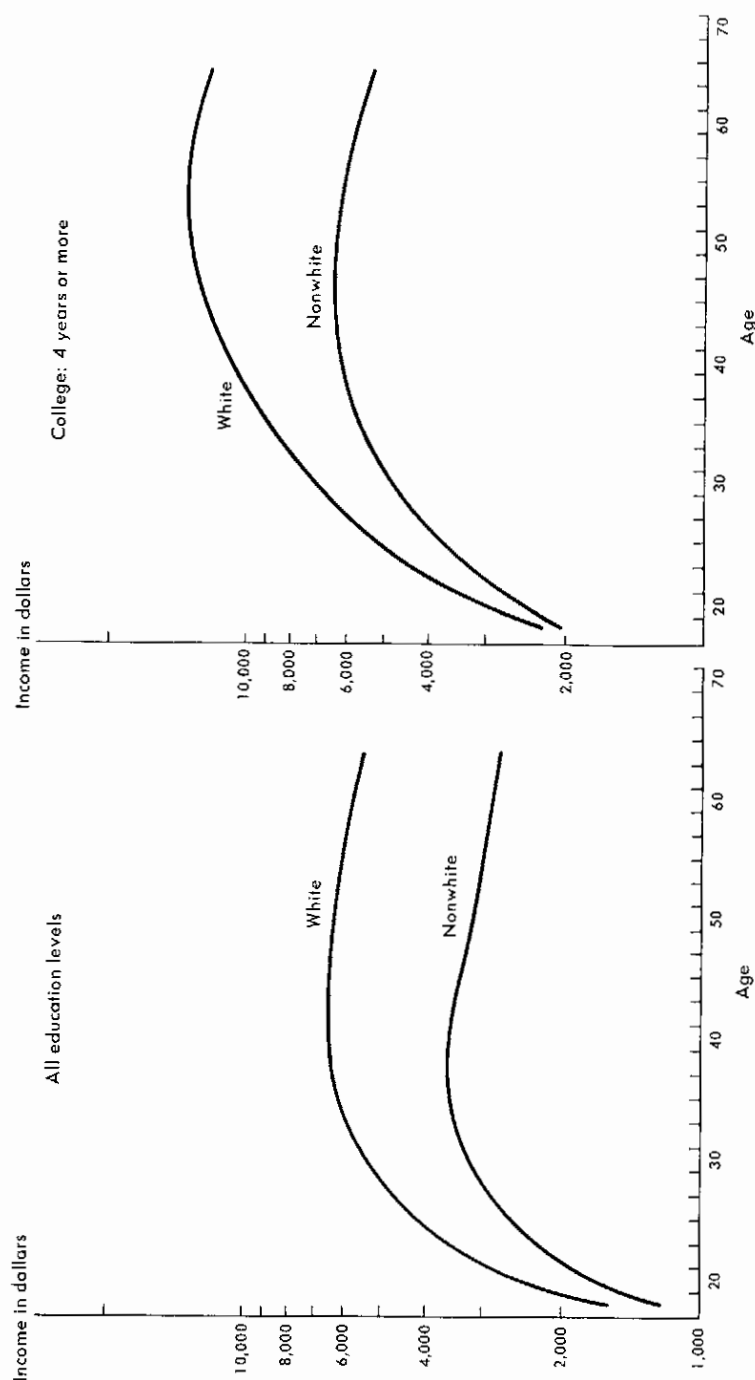
In 1959, young white males could expect their earnings to rise to a peak about twice that of a nonwhite. For equivalent educational levels (nominally equivalent, i.e., without regard to quality differences) white college graduates could look forward to an even higher relative difference in income growth than a nonwhite. Equally important, according to our conjecture on the significance of growth with maturation, is the fact that income for a white person continues to rise for a number of years after the earlier peak is reached for a nonwhite. The longer period of income growth with age is even more marked for white college graduates compared with their nonwhite counterparts. Clearly, however, both white and nonwhite college graduates could look forward to substantially more growth in income than their corresponding group average.

The data in Figure 2 are intended to illustrate only broadly the different patterns of expectation of income growth. They are by no means precise for several reasons. First, of course, a cross-section for 1959 may not fully reflect changes over time. Second, no adjustment is made in these figures (although data are available in the original source) for differences resulting from economic growth. This factor has been discussed earlier. Third, no adjustment was made for the difference between whites and nonwhites in their evaluation of the future. It seems reasonable to suppose at least at this writing that nonwhites discount the future at a higher rate (in other words, value it less) than whites. A higher discount rate for nonwhites than for whites, in order to show the present value of expected earnings, would widen the relative differences between whites and nonwhites shown in Figure 2.

By way of summary, the examination of data on income in relation to age has shown that this growth with age is far less evident for the disadvantaged than for others. More specifically it has shown:

1. The growth in income with age is much more marked for men than for women, though the growth pattern for women has shown considerable improvement.
2. It is far more marked for whites than nonwhites for each level of education completed. This was particularly evident in the

FIGURE 2. EXPECTED LIFETIME EARNINGS FOR MALES IN 1959



NOTE: This chart is plotted on a ratio scale.

SOURCES: Based on data from Miller, H. P., and R. A. Hornseth, "Present Value of Estimated Lifetime Earnings," U.S. Bureau of the Census Technical Paper No. 16, Washington, 1967. See this source for description of estimates. Basic data for this chart are in Reference Tables B and C, pp. 520-521.

measure of earning power as indicated in the figure on lifetime earnings.

3. College graduates have a much more pronounced growth in income with age than those with less schooling, but the difference between white and nonwhite is greater at this level than at lower education levels.

It is suggested that the nature of growth in income with maturation be explored much more fully as an added dimension to comparisons of levels of living over time and among different regions and countries. This should be done not only to sharpen the study of economic disadvantage, at any one time, but more broadly to include a study of the changing pattern of differences in economic expectation among all significant groupings, including key groups within a middle range of income.

In this connection some emphasis should be put on the fact that our data are quite inadequate to the task of dealing with significant groupings within the middle range of income. In particular the blue-collar (sometimes referred to clumsily as "nonsupervisory personnel"), the low-income white-collar, and possibly the small proprietor are in a special situation today. These groups have had to bear much of the problem of adjustments resulting from special advantages that have been conferred upon the poor through improved housing, job training, and lowering the barriers to job entry. The problems of adjustments within neighborhoods, in the schools, and on the job have doubtless been more severe for these groups in the lower-middle range of incomes than for those at much higher levels, and might explain some of the antagonisms expressed by these groups toward policies designed to help the most disadvantaged classes.

This note on where our data frontier seems to stop should be seen as a call to enrich research on the distribution of social benefits and costs. Socioeconomic groupings other than size groupings of income are needed. The white-nonwhite classification discussed earlier is a significant step in this direction, but it is clear that other social groupings of data are needed.

While information on income by occupation is surely helpful in this connection, the need is greater and requires not only a measure of economic benefit (such as income and assets) and by significant socioeconomic groupings—but also of cost—including taxes and perhaps less measurable—the major problems of adjustment to social change, such as those faced by people in the low-middle range of income, and others.

CHOICE AND CONSUMER BEHAVIOR

Is consumption absolute? Obviously not. Certainly no economic goal should be expected to provide the answer to all things. But beyond a fruitless metaphysical probe on the meaning of consumer satisfaction, it is useful to ask how one evaluates the goal of ever-increasing levels of material well-being. Does this goal lead to longer life, greater opportunities for fulfilling individual abilities and expectations, lessened crime and disease, and in general to enhanced benefits to individuals and society? This search for a gain in terms that include but go beyond the measuring rod of income and wealth is one of the essential tasks of appraising social change and is especially challenging in the area of consumption. We will briefly examine some aspects of this issue in the latter part of this section. We raise this question now in order to emphasize one main, perhaps obvious, point: The importance of the continued increase in economic well-being cannot be appraised simply by charting its growing volume.

It is true, of course, that an increasing volume of production and consumption of goods and services necessarily implies that society, through individual and collective choice, has been willing to pay for this growing volume of goods and services. The fact that production and consumption has been growing implies a growing "willingness" to pay the requisite prices.

However, the issue of appraising changing consumption levels goes deeper. Consider the following:

1. Consumption per se, by apparent preference, diminishes and investment rises in relation to total personal income as one goes up the income scale, suggesting a diminishing marginal utility to purchases of goods and services. This is true at least in comparing different families at a given point in time. Over time the problem is more complicated and will be discussed further in this section. That there is diminishing preference for food and certain other basics as income increases over time as well as among families is well established—and can even be numbered as one of the very few laws of economics.

2. Consumption goods may conceivably increase their "productivity" in the sense of satisfaction per unit of consumption. To the extent, therefore, that some consumer goods are inputs to satisfaction, the smaller the input for the given level of satisfaction, the higher the "productivity" of consumer goods and the lower will be the requirement per unit of satisfaction. Thus, for example, a person who can

make do with less expense for housing plus transportation would be better off than if he has more expense, assuming equal satisfaction.

3. The person, family, or community that has greater public facilities for general use as supplements rather than as substitutes for what may be financed out of personal income is better off than one with lesser facilities. By this we mean, clearly, that comparing two persons in different communities, enjoying the same personal income and personal consumption, the one with greater public facilities is better off than the one with the lesser. To what extent, however, the person enjoying added public facilities is better off than a person in another community with the same total value of consumption but in which the same facilities (say, education) must be paid for privately—is a particularly challenging question.

4. A person with more information about consumption and investment is potentially better off than his counterpart with less information but with the same amount of time to choose. The more knowledgeable person may obtain the same bundle of goods for lower prices, or out of a given income obtain a larger bundle, or make a better choice, because enhanced knowledge permits him to find the lower prices or the better quality goods or the investments with the higher rates of return.

5. Finally, the person whose choices can be made with little danger of personal harm or risk of loss of income—under conditions in which either markets are functioning efficiently or public protection is provided—is better off than the person without such protective conditions.

We suggest that all of the above may be subsumed under the general issue of choice. That is, at almost any level of income, and certainly as income levels rise higher and higher—*choices* become the main issue of personal, family, and social improvement. These choices involve the allocation of income and time among various goods and services, the choices among investments, and between consumption and investment. Finally, for society as a whole choices must be made as to how much of total effort and resources should go to private and how much to public goods and services.

To deal with this broad problem we propose to consider four aspects:

1. The life cycle over which choices must be made;
2. The growing importance of investment in all forms;
3. The growing importance of consumption that is collectively provided and used;

4. The significance of time as a fundamental element of cost in consumption.

The Life Cycle

Levels of living encompass all the economic costs and rewards that span a lifetime. An adequate study of living conditions must take into account the process by which resources are used to enable persons and households to take care of their bodily needs and tastes, to plan their future in the way of major expenses for a growing career, a home and its furnishings, or for a car, for major medical expenses, and for major educational expenses for themselves and their children. It comprises the need to meet the stream of expenses that come in small amounts day by day and for those that come in large chunks—the ones that require large outlays, special financing, and particular judgments based on one's aspirations or status.

As the family or single adult matures, changes in consumption and investment unavoidably occur. The young consumer seeks a different volume and composition of goods and services from the old, and he devotes a different portion of his time and income to investment in the form of training or financial or tangible asset formation.

The process of maturation, as far as consumer behavior is concerned, is a threefold one involving (1) changing growth in income both as maturation proceeds and the total economy grows, (2) differing tastes as people grow older and their incomes change, and (3) asset formation.

Since these processes involve decisions concerning trade-offs between present and future, between consumption and investment (i.e., between immediate satisfactions and increasing future earning or consuming capability) they are at the very core of the issue of choice.

Income. In an earlier section we conjectured that different patterns of growth in income with age were basic to the measurement of relative well-being or deprivation. The different patterns of *actual* growth in income over the life cycle, and the implications of these existing or past patterns of expectations, clearly make for a considerable difference in ability to plan for the future and to meet changing needs.

In this section, we do not stress the differences, though they are especially marked by color, occupation, and sex. What we place emphasis on at this point is the showing that by and large for a broad mass of the people in our society income does grow markedly with age, and that this pattern is probably highly predictable in a statistical sense

(rather than for any one individual). The curves of lifetime earnings in Figure 2 and the suggestion emerging from Table 8 that the tapering off in growth in incomes in later stages of life may be diminishing underscore the stability of this relationship. Also, as was shown in Table 12, while the growth in income with age for women has been a relatively recent phenomenon, it is apparently now well established.

As was pointed out earlier, the rise in income with age is associated both with maturation or rising individual productivity as well as with a generally rising and more productive economy. One force presumably reinforces the other. In particular, if the growth in economy is more stable—less cyclical fluctuation—the predictability of the increase in income with age is reinforced.

The increased stability of growth in the economy is illustrated in Figure 1 which shows that the growth in total income during the period after World War II is the most stable in the entire period since the beginning of the century. The upward trend in income in the chart shows up as nearly a straight line (plotted on a ratio scale), suggesting that in the past two decades the predictability of growth in income over the life span has probably been strengthened.

In the sections which follow on consumption and asset formation we illustrate the simple and obvious fact that the allocation of income varies considerably over the life cycle. The broad aggregate data show this rather imprecisely but adequately enough to emphasize that the study of family maturation in terms of income growth and use needs much more attention. But following this path is likely to be necessary if depth in the measurement of consumer choice is to be achieved.

Consumption. The changing character of expenditures by age is illustrated in Table 13, based on the Labor Department's Survey of Consumer Expenditures. The percentage shares of major expenditures for house furnishings and equipment and for autos predominate in the earliest adult family stages, education expenses nearer the middle and later stages, and food and medical care in the latest phases. The percentage share for shelter is highest at the earliest and latest stages.

Because income and age are positively correlated up to approximately a middle range of income and then negatively correlated, expenditure and age are cross-classified with income in Tables 14 and 15, the first on house furnishings, the second on auto purchase.

For all age groups, the percentage spent for house furnishings and equipment declines with age. It starts at around 6 to 7 per cent of total expenditures at age twenty-five and declines to under 4 per cent in the

TABLE 13. PERCENTAGE DISTRIBUTION OF PERSONAL CONSUMPTION EXPENDITURES, BY AGE OF HEAD, 1960-1961

Age group	Total	Food	Shelter	House Furnish- ings and Equip.		Cloth- ing	Medical care		Educa- tion	Auto	All other	
				Equip.			care					
Total	100.0	24.5	13.0	5.3		10.3	6.7		1.0	13.7	25.5	
Under 25	100.0	21.6	15.1	6.6		9.2	5.9		1.0	18.3	22.3	
25-34	100.0	23.6	14.3	6.0		9.8	6.0		0.7	14.7	24.9	
35-44	100.0	25.0	12.3	5.5		11.4	5.8		1.1	13.7	25.2	
45-54	100.0	24.2	11.8	4.9		11.4	6.2		1.8	14.1	25.6	
55-64	100.0	24.8	12.6	4.8		9.6	7.8		0.8	13.3	26.3	
65-74	100.0	25.5	14.6	4.3		7.5	9.7		0.3	10.7	27.4	
75 and over	100.0	27.4	16.1	3.6		6.1	12.1		0.2	7.6	26.9	

SOURCE: "Consumer Expenditures and Income," Report No. 237-93, U.S. Bureau of Labor Statistics, June, 1966, Table 3A. Includes all urban and rural families and single consumers in the U.S.

TABLE 14. PERCENTAGE DISTRIBUTION OF HOUSE FURNISHINGS AND EQUIPMENT, BY INCOME AND AGE OF HEAD, 1960-1961

Income	Age								
	Total	Under 25		25-34	35-44	45-54	55-64	65-74	75 and over
Total	5.3	6.6	6.0	5.5	4.9	4.8	4.3	3.6	
Under \$ 1,000	3.8	3.7	8.2	2.8	3.6	3.9	4.1	2.9	
1,000-1,900	4.0	5.1	4.8	5.9	5.0	3.8	3.6	3.2	
2,000-2,900	4.4	4.4	4.8	4.6	5.0	4.1	4.1	3.6	
3,000-3,900	4.9	5.9	5.2	4.9	5.0	4.7	4.1	4.9	
4,000-4,900	5.1	5.6	5.5	5.0	4.8	4.8	4.9	3.2	
5,000-5,900	5.5	8.3	6.4	4.9	4.8	4.8	4.6	2.5	
6,000-7,400	5.5	8.4	6.2	5.4	4.9	5.3	5.0	4.2	
7,500-9,900	5.5	6.5	6.2	5.7	5.1	4.7	4.3	4.3	
10,000-14,900	5.5	1.9	6.8	5.7	5.3	5.1	3.8	3.9	
15,000 and over	5.4	7.9	9.5	7.2	4.2	5.2	4.5	3.7	

SOURCE: See Table 13; "Consumer Expenditures and Income," Table 1A and Supplement 2, Tables 14a-14g.

TABLE 15. PERCENTAGE DISTRIBUTION OF AUTOMOBILE PURCHASE,
BY INCOME AND AGE OF HEAD, 1960-1961

Income	Age							
	Total	Under 25	25-34	35-44	45-54	55-64	65-74	75 and over
Total	13.7	18.2	14.7	13.7	14.1	13.3	10.7	7.6
Under \$ 1,000	5.3	5.8	6.9	11.9	6.5	5.8	3.2	2.0
1,000-1,900	6.3	9.5	8.6	6.1	8.6	7.9	5.6	3.2
2,000-2,900	9.4	12.2	10.9	11.8	8.4	9.0	8.3	6.9
3,000-3,900	12.8	17.7	14.9	12.5	12.2	11.1	10.9	8.6
4,000-4,900	15.0	22.1	15.2	13.2	14.9	14.9	13.3	10.9
5,000-5,900	14.8	19.3	15.6	13.6	15.2	14.1	12.8	12.8
6,000-7,400	14.6	17.2	15.2	13.7	15.0	14.7	14.1	5.4
7,500-9,900	15.1	21.0	14.4	15.0	15.0	15.7	15.6	12.8
10,000-14,900	14.6	25.3	15.3	14.0	15.2	14.6	12.3	15.1
15,000 and over	11.2	7.3	7.9	11.5	11.8	10.3	9.5	19.8

SOURCE: See Table 13; "Consumer Expenditures and Income," Table 1A and Supplement 2, Tables 14a-14g.

late ages. The lowest income groups show the same general pattern, but it is somewhat more erratic, either peaking at a somewhat later age or having more than one peak. For example, for incomes under \$3,000 or \$4,000, peaks in the percentage share show up after thirty-five years of age. As incomes rise, the tendency for the high peak to show up in the earlier age groups (under thirty-four) is most marked and the decline in the share in later stages of life more pronounced. The exceptionally low percentage shown for the group with \$10,000 to \$14,900 in income and under twenty-five is very likely a result of large sampling error.

A straightforward reading of Table 15 shows that the share of expenditures for autos declines with age more clearly for the lower income than for the higher income groups. This contrast in the decline with age between high and low income groups is less evident for house furnishings than for autos.

One should consider in tables of this sort an adjustment that takes into account that income rises in nearly all cases with age. Keeping income constant, as these tables purport to do, doesn't truly reflect the life cycle effect. A proper adjustment would need to be based on a longitudinal study of families. But a very rough notion can be obtained. If one lets income and age rise by, say, roughly going along a diagonal, rather than horizontal, path in the tables there is a clearer decline in the percentage spent for autos and house furnishings, as age and income increase together.

These tables are largely illustrative of what is essentially an obvious point, namely, that the timing of major expenditures varies over the life span. These and other major outlays may be more predictable if examined more closely than can be done here. To what extent these outlays could be made more rational in terms of their amount, their timing, use of income, of credit, and assets is a challenge in future study of consumption.

Personal Wealth. One of the most comprehensive sources of information on personal wealth holdings by type of wealth and wealth holder is the Survey of Financial Characteristics of Consumers conducted for the Federal Reserve Board in the spring of 1963. Questions on assets and debt were asked in great detail as of December, 1962, and related to income and various other characteristics. The sample was specially designed to include a large number of relatively wealthy consumers and to still be representative of all units in the United States.

The unprecedented detail obtained on wealth and the various checks made on reliability for this survey give it a special place in an extremely difficult area of economic observation. At the same time, it should be recognized that data of this kind are especially subject to error—broadly speaking, subject to understatement. It is believed, however, that the distributions tend to provide a reasonably reliable profile of wealth holdings, even though the broad aggregates derivable from the survey tend to be below national totals obtained from financial institutions.

Our purpose in using these data is to stress the relation of wealth and its composition to the life cycle, using age of the head of the consumer unit as the life cycle variable.

The relationship of amount of wealth with age is shown in Table 16. The data are cross-classified with income. As the table shows, in all but two income classes, the amount of wealth rises systematically with age to a peak in the oldest age group. In the relatively high income classes the relationship is somewhat less systematic. For example, in the income ranging between \$25,000 to \$50,000, the youngest age group shown has the largest amount of wealth. This is caused by exceptionally large holdings of miscellaneous assets, mostly personal trusts, which is probably a random occurrence, to be expected when the numbers in the cells become rather small as a result of the three-way tabulation of income, age, and wealth. Sampling error is probably also responsible for the decline in wealth at age sixty-five and over for the \$100,000 and over income group.

The rise in wealth with age would probably be even more substantial and the decline for the poorest of the oldest age group somewhat reduced if instead of a cross-section analysis as shown in this table, a cohort or longitudinal analysis for a significant time span were shown instead. Unfortunately, such data are not available in this survey.

An interesting attempt at a cohort analysis was undertaken by Lansing and Sonquist using data from the Surveys of Consumer Finances in 1953 and 1962 of the Survey Research Center at the University of Michigan.¹⁰ Samples of heads of spending units born within $\pm$ five years of 1890, 1900, 1910, 1920, and 1929 formed the cohorts whose change in wealth from 1953 to 1962 was examined in this study.

The familiar pattern of wealth increasing in level with age is shown in Table 17 for the year 1962 for both whites and Negroes. Increases in wealth from 1953 to 1962 were generally more marked for the young than for the old and somewhat higher for the ones with more schooling. Whites had far more wealth than Negroes. Note, for ex-

TABLE 16. COMPOSITION OF WEALTH, MEAN AMOUNT
BY INCOME AND AGE, DECEMBER 31, 1962

1962 income	Age				
	All units	Under 35	35-54	55-64	65 and over
All units	20,982	6,304	19,305	32,527	30,838
0- 2,999	7,609	1,802	4,500	11,127	9,702
3,000- 4,999	10,025	1,158	7,176	16,781	22,474
5,000- 7,499	13,207	5,005	12,534	20,677	37,767
7,500- 9,999	19,131	5,904	15,190	39,917	58,545
10,000-14,999	28,021	10,807	24,626	36,565	89,148
15,000-24,999	62,966	22,734	47,112	83,009	169,315
25,000-49,999	291,317	1,396,328	190,297	262,028	432,882
50,000-99,999	653,223	647,323	743,609	549,204	688,613
100,000 and over	1,698,021	n.a.	2,120,093	3,006,155	1,193,042

NOTE: Wealth is defined in this survey to be the value (generally market value as of the end of 1962) of assets minus the debts secured by these assets. Assets covered in the survey included two tangibles: homes and autos, financial assets including the value of equities in family-owned farms, businesses, or professions, liquid assets (checking and savings accounts and U.S. savings bonds), investment assets (mainly marketable securities, investment in real estate, and mortgages), and a miscellaneous group consisting largely of assets held in trust.

SOURCE: Projector, D. S., and G. S. Weiss, "Survey of Financial Characteristics of Consumers," Federal Reserve Board, 1966, based on data from Table A8, pp. 110-111.

TABLE 17. MEAN NET WORTH OF SPENDING UNITS
BY AGE AND COLOR OF HEAD OF UNIT AND EDUCATION OF WHITE

Cohort	WHITE					
	Grammar School		High School		College	
	Level in 1962	Percentage increase 1953-1962	Level in 1962	Percentage increase 1953-1962	Level in 1962	Percentage increase 1953-1962
1929	2,700	3.8	7,900	139.4	14,200	173.1
1920	7,500	44.2	15,400	94.9	23,800	91.9
1910	14,100	67.9	21,200	43.2	35,800	59.8
1900	14,000	12.0	23,700	9.2	33,200	-1.5
1890	11,400	-16.2	19,800	-18.2	61,200	35.4

NEGRO—ALL EDUCATION LEVELS			
Cohort	Level in 1962	Percentage increase 1953-1962	
1929	1,900	216.7	
1920	3,500	105.9	
1910	3,800	22.6	
1900	4,100	2.5	
1890	3,400	-30.6	

SOURCE: Lansing, J. B., and J. Sonquist, "A Cohort Analysis of Changes in the Distribution of Wealth," Conference on Research in Income and Wealth, March, 1967.

ample, that the average amount of wealth for each Negro cohort at all education levels was only a small fraction of the wealth held by whites who had only a grammar school education. The percentage increase from 1953 to 1962, however, for the youngest Negro cohort (those born in 1929) was larger than for any white group.

Lansing and Sonquist caution against precise use of the data, particularly the very small rise for the young white persons with only a grammar school education and the very large rise in the oldest of the white college graduates (probably due to sampling error possibly arising from an exceptional capital gain in stocks).

Returning to the Federal Reserve Survey, Table 18 provides information on types of assets in relation to age. Ownership of tangible assets (a house or car) or a private business is relatively important in the earlier stages of life. In the later stages liquid assets and particularly investment assets (e.g., marketable securities) increase in importance.

TABLE 18. PERCENTAGE DISTRIBUTION OF FORMS OF WEALTH BY AGE GROUP

<i>Form of wealth</i>	<i>All units</i>	<i>Age of head</i>				
		<i>Under 35</i>	<i>35-44</i>	<i>45-54</i>	<i>55-64</i>	<i>65 and over</i>
<i>Total</i>	100	100	100	100	100	100
Own home	27	26	31	33	25	22
Automobile	3	7	5	4	2	1
Business	18	12	23	23	20	12
Liquid assets	13	9	10	11	13	16
Investment assets	33	13	22	26	38	47
Miscellaneous assets	5	32	9	3	2	1

SOURCE: See Table 16.

Following the Federal Reserve Board survey, which was taken in the spring of 1963 and which emphasized the amount of net worth at the end of 1962, the same group was reinterviewed a year later to emphasize the flow of savings during 1963. The two interviews together provide a basis for measuring changes in family finances. A study based on this second survey was made available to me prior to publication by the Federal Reserve Board.¹¹

A highly useful series of distributions for 1946, 1948, 1949, 1950, 1960-1961, and 1963 shown in Table 19 was put together in this study

showing the relation between age and income and saving (see footnotes to this and earlier tables for definition of saving).

The column in the table entitled "income mean ratio" is the ratio of mean income of the given age group to the mean income for all groups. Thus, according to the 1963 Survey of Changes in Family Finances (the last bank of figures in the lower right corner of Table 19) the mean income for the youngest units was 71 per cent of the general mean. This ratio reaches a peak, about a fourth higher than the general mean, in the forty-five to fifty-four age group. The life cycle patterns of income and saving are broadly similar from one survey to the next.

The saving mean ratio reached higher peaks than income in the older but not the oldest age groups in all surveys. Saving in relation to income is shown to be an increasing function of age for all surveys except that for 1963. The exception in the 1963 survey results from a high saving-income ratio in the twenty-five to thirty-four age group. The 1963 survey, however, was believed to have understated debt (and hence overstated saving) presumably in the youngest age. If this understatement is allowed for, a significant part of the departure of the 1963 data from the tendency of saving to increase with age is reduced.

The Projector study attempts to examine the results of the 1963 survey in the light of several theories which determine saving. Most theories deal with *total* saving in relation to income not its differing composition in relation to income.

One of the most important theories for our purpose examined in the Projector study is the Modigliani and Ando theory of the life cycle. According to this theory, "the purpose of saving is to enable the household to redistribute the resources it gets (and expects to get) over its life cycle in order to secure the most desirable pattern of consumption over life."¹²

Without attempting to define what this "most desirable pattern" might mean, the relevant question is whether the optimum sought by consumers is over the general span of life or in any current period in relation to current income.

The significant variables of importance in this hypothesis are: current income, income to be expected over the remaining life span (expressed in terms of a present value of future earnings—as we have shown earlier in Figure 2) and the current worth of saving (assets minus debt).

Younger consumers would be expected on the basis of this hypothesis to spend in a given year a smaller fraction of their *current net worth*

than older consumers because the use of a given amount of resources is supposed to extend over a longer period for the young than for the old.

With regard to the use of *current income*, this hypothesis says that as current income varies (generally upward with age aside from short-run changes), the fraction of the change in income spent for consumption depends upon the total anticipated resources over the life span. A given rise in current income, according to this view, will produce a larger increase in expected total future resources for the young than for the old. As a consequence, younger people will spend a larger fraction of a given increase in current income—and this fraction will decline with age until the oldest working age group (fifty-five to sixty-four). Beyond this age the fraction increases. The Projector survey found its data “to be in accord with a modified life cycle theory,” although various complications of data, definitions of savings, and assumptions about bequests, make a precise test difficult.

What is important for our purpose is not so much the question of whether some optimum consumption-saving pattern *in fact* is *planned* over a life span as that major changes in economic and social requirements over the life span necessitate understanding of the pattern of growth of economic resources. If the level of well-being is to be appraised in this context, it is well to know to what extent consumption and saving is or has been guided by foolish or wise hopes and by the presence or absence of regrets—vain or otherwise.

The significance of the age-income, consumption-and-asset relationships has not been fully explicated in this writing. The data presented are largely illustrative of the pervasive importance of the age factor and the implication that research be oriented more to an understanding of the decision process over the life span.

Growth in Assets and Debt

The expansion in holdings of wealth in financial and physical form constitutes one of the major trends in recent history of U.S. households. Accompanying this expansion has been a continuation of the upward trend in consumer debt—particularly long-term mortgage debt and also shorter-term instalment and noninstalment credit.

The changing amounts outstanding and composition of financial assets and liabilities are shown in Table 20 based on data published by the Federal Reserve Board. In the twenty-year period shown, total financial assets grew fourfold to an estimated figure of \$1,438.8 billion by the end of 1965, while debt grew tenfold to a level of \$342.5 bil-

TABLE 19. RELATION AMONG SAVING, INCOME, AND AGE OF CONSUMER UNIT,
SELECTED YEARS, 1946-1963

Age of head	1946				1948				1949			
	Income mean ratio	Saving mean ratio	Mean saving as percentage of mean income	Mean saving as percentage of mean income	Income mean ratio	Saving mean ratio	Mean saving as percentage of mean income	Mean saving as percentage of mean income	Income mean ratio	Saving mean ratio	Mean saving as percentage of mean income	Mean saving as percentage of mean income
18-24	57	-15	-3	-3	65	-27	-3	-3	64	-36	-3	-3
25-34	95	57	6	6	98	56	4	4	97	40	2	2
35-44	118	136	12	12	119	149	8	8	118	113	5	5
45-54	{116	{149	{13	{13	122	197	11	11	121	179	8	8
55-64	57	55	10	10	103	122	8	8	109	225	11	11
65 and over					61	13	1	1	64	36	3	3
1960-61 Saving A												
18-24	67	22	3	3	76	14	2	2				
25-34	104	67	5	5	103	94	8	8				
35-44	119	143	9	9	122	126	9	9				
45-54	118	158	10	10	120	143	11	11				
55-64	103	141	11	11	96	114	11	11				
65 and over	54	2	"	"	60	41	6	6				

	1960-61 Saving C			1963		
18-24	76	-61	-3	71	37	5
25-34	103	80	3	105	145	13
35-44	122	116	3	122	118	9
45-54	120	152	5	124	180	14
55-64	96	145	5	95	74	8
65 and over	60	50	3	57	-8	-1

* Less than 1/2 of 1 per cent.

SOURCES: Projector, D., "Survey of Changes in Family Finances," Federal Reserve Board, in press.

Data for 1946, 1948-1950 are from Surveys of Consumer Finances. Data for 1946 are published in Fisher, Janet A., "Income, Spending, and Saving Patterns of Consumer Units in Different Age Groups," *Studies in Income and Wealth*, vol. XV, National Bureau of Economic Research, New York, 1952, p. 92. Data on saving and its distribution by age group for 1948-1950 are from "1951 Survey of Consumer Finances, Part IV, Distribution of Consumer Saving in 1950," *Federal Reserve Bulletin*, September, 1951, Tables 7 and 16. Data on mean income are shown in "1951 Survey of Consumer Finances, Part III, Distribution of Consumer Income in 1950," *Federal Reserve Bulletin*, August, 1951, Table 1. The distribution of income by age group is from unpublished data. Saving excludes purchases of consumer durable goods and includes life insurance premiums. Income is before tax.

Data for 1960-1961 are from the Survey of Consumer Expenditures. The figures shown in the table are derived from the following publications of U.S. Bureau of Labor Statistics: "Consumer Expenditures and Income, Total United States, Urban and Rural, 1960-61," BLS Report No. 237-93 (USDA Report CES-15), February 1965, Table 3A, p. 13. Saving A is the sum of the Survey of Consumer Expenditures items "net change in assets and liabilities" and "personal insurance." Saving C is the Survey of Consumer Expenditures item "net change in assets and liabilities." Income is money income after taxes.

Data for 1963 are from the Survey of Changes in Family Finances. See Tables S8 and S17 and S13, in the study to be published by the Federal Reserve Board. Saving is the Survey of Changes in Family Finances concept of saving less net purchases of automobiles and less payments to retirement plans. Income is disposable income.

TABLE 20. FINANCIAL ASSETS AND LIABILITIES OF U.S. HOUSEHOLDS
(YEAR-END AMOUNTS OUTSTANDING), 1945-1965

Assets and liabilities	1945	1950	1955	1960	1965	Percentage increases	
						1945-55	1955-65
				(billions of dollars)			
Total Assets	355.4	431.5	683.7	931.0	1,438.8	92.4	110.4
Checking accounts and currency	54.1	55.8	63.7	65.9	86.7	17.7	36.1
Savings accounts	50.0	67.1	105.5	165.3	279.5	111.0	164.9
Life insurance reserves	39.5	55.0	69.3	85.2	105.9	75.4	52.8
Pension reserves	9.9	23.8	49.6	89.4	150.8	401.0	104.0
U.S. government securities	65.1	66.7	66.8	69.8	77.6	2.6	16.2
State and local obligations	7.2	9.6	18.6	28.7	38.4	158.3	106.5
Corporate and foreign bonds	7.6	3.9	4.8	6.7	4.6	-33.8	-4.2
Corporate stock	110.6	133.3	284.9	394.3	666.3	157.6	133.9
Mortgages	5.4	7.7	9.3	11.8	10.3	72.2	10.8
Other	5.9	8.6	11.3	13.9	18.7	91.5	65.5
Total Liabilities	31.0	72.3	139.9	221.9	342.5	351.3	144.8
Mortgage debt	14.5	39.7	84.9	142.2	217.6	485.5	156.3
Short-term debt	5.7	21.5	38.8	56.0	87.9	580.7	126.5
Other	10.8	11.1	16.2	23.7	37.0	50.0	128.4

SOURCES: Derived from "Flow of Funds Accounts, 1945-1967," Federal Reserve Board, 1968, Table 8, p. 160. The household sector in the Flow of Funds accounts include—in addition to persons as members of households—personal trusts and nonprofit organizations serving individuals, such as foundations, private schools and hospitals, labor unions, churches, and charitable organizations. While no separate data on a continuing basis are available, the importance of personal trusts and nonprofit organizations in the early 1960's is estimated at about \$60 billion in bank-administered personal trusts and roughly \$25 to \$30 billion in nonprofit organizations, or slightly under 1 per cent of the total household sector holdings (\$1,100 billion in the early 1960's).

For slightly different levels than shown in the table, resulting mainly from a different definition of the household sector, see Goldsmith, R. W., R. E. Lipsey, and M. Mendelson, *Studies in the National Balance Sheet of the United States*, vol. II, National Bureau of Economic Research, New York, 1963. The trends in that source are in the main almost identical to the Federal Reserve for the period covered by both sources (1945-1958).

lion. The rate of increase in assets has apparently accelerated in the past ten years compared with the preceding decade, while the expansion rate for debt has declined though still remaining quite rapid.

The largest single financial asset category in all the years shown is corporate stock amounting at market value in 1965 to \$666.3 billion. The rapid increase in stock holdings of 158 per cent in the first decade has abated only slightly in the second partly reflecting differential increases in stock market prices, which were more rapid in the first decade after World War II (mainly between 1950 and 1955) than in the second.

The growth in the various asset categories was particularly marked for pension and life insurance reserves and checking and savings accounts. Corporate bonds were the only holdings to decline in the twenty-year span, partly reflecting the marked increase in preference for corporate stock and the general inflation of prices. Since 1965 (the last year shown in the table), however, bond holdings have increased because of the sizable upswing in interest rates.

The expansion in financial assets of households described above has been accompanied by a considerable increase in ownership of wealth in tangible form. Data on the amount of tangible wealth (houses, autos, house furnishings, and other personal property in physical form) is much less reliable or even quantifiable than for financial assets largely because active markets and prices for tangible property (though widespread for houses and autos) are much less pervasive and specific than for financial assets.

In recent years the current gross outlays for purchase of houses, autos, and personal or household equipment has constituted about 10 per cent of the Gross National Product. It is estimated that in 1965 persons and families in the United States had in their possession a total value outstanding of property in the form of houses, equipment, furnishings, and automobiles amounting to around \$700 billion in current market prices. (This includes about \$70 billion in autos, approximately \$120 billion in major household or other durables, roughly \$450 billion in nonfarm owner-occupied housing plus land, and some \$60 billion in miscellaneous physical holdings in business properties and other possessions.)¹³

Of course, these figures do not imply that if all of these goods were sold at once, so much cash would accrue to the owners. Nor do these values equal the amount of equity in those goods since debt on owner-occupied housing (\$204 billion) and on autos and durables (\$46 billion) totaled \$250 billion or about 35 per cent of the asset value of tangible property. What the values do signify in a general way is that

there exists an accumulation of capital or durable goods which at current market prices will provide the services to meet current goals of shelter, recreation, transportation, and other intangible goals over an extended period of time. Such considerations are important in the aggregate in time of war or depression when output and buying of such goods are curtailed. Anticipation of war shortages has led to "panic" buying of durables, for example, at the outbreak of the Korean war.

The dollar figures on trends for all households taken together surely imply that, on the whole, the increase in wealth has been very substantial indeed. But the wins, losses, and draws among various households over the years cannot easily be revealed. For a determination of such differences, as in many other evaluations of household behavior, a longitudinal study would be important to identify over a significant period of time, the shifts in fortunes of individual households.

In the absence of such in-depth studies some notion of the distribution of total wealth would be helpful. An approximate measure of how wealth in financial and tangible form is distributed among consumers is available from the Federal Reserve-Census Survey of Financial Characteristics. As indicated in Table 21, and as might well have been expected, investment assets (mortgages, real estate, corporate stock and other marketable securities) are much less equally distributed than ownership of a home, liquid assets (savings accounts, U.S. savings bonds, and checking accounts) or automobiles. For example, the 1 per cent of the consumer units whose total wealth holdings are \$200,000 and over account for some 55 per cent of the total value of investment assets.

If we were to array consumer units by current income and by wealth (not shown in this table) we would find that wealth holdings are much more unequal than current income. We would also find that ownership of a home and of liquid assets are more nearly distributed like income than investment assets, particularly marketable securities.

Studies of the change in the concentration of wealth suggest that large holdings are becoming only slightly more widespread.¹⁴ It will be recalled (see discussion of Table 17) that the accumulation of assets for Negroes has been very meager indeed, even compared with whites who have had only a grammar school education.

Holdings of major consumer durables are, of course, very widespread in the United States, and in terms of mass consumption, are probably the most apparent hallmark of our economy. This often-heralded accomplishment of U.S. industry is clearly seen in Table 22.

The distribution of households with one or more of the items of

TABLE 21. DISTRIBUTION OF WEALTH
BY SIZE OF WEALTH
(PERCENTAGE OF EQUITY IN SPECIFIED ASSETS),
DECEMBER 31, 1962

Size of wealth in dollars	Distribu- tion of consumer units	Distribution of wealth by form			
		Own home	Auto- mobile	Liquid assets	Invest- ment assets
All units ^a	100	100	100	100	100
Negative	2	^b	-1	^b	^b
Zero	8	^b	^b	^b	^b
1-999	15	^b	5	1	^b
1,000-4,999	19	4	13	5	^b
5,000-9,999	16	12	15	7	1
10,000-24,999	23	36	30	23	7
25,000-49,999	11	24	19	25	11
50,000-99,999	4	11	10	17	15
100,000-199,999	1	5	4	8	11
200,000-499,999	1	4	3	7	22
500,000 and over		4	2	6	32

^a Figures are rounded and may not always total 100.

^b Less than ½ of 1 per cent.

SOURCE: Based on Projector, D. S., and G. S. Weiss, "Survey of Financial Characteristics of Consumers," Federal Reserve Board, 1966, Tables A-16 and A-36.

equipment shown is very widespread among all income groups, particularly for standard items such as autos, refrigerators, television sets, and washing machines. Of course, these distributions say nothing of the value or condition of these items. In value terms, the distributions would be far less equal.

In connection with these widespread holdings of durables, the rising trend of costs associated with their maintenance is noteworthy. As Table 23 shows, these costs are estimated to have grown from \$4.1 billion in 1929 to \$37.5 billion in 1965 or a ninefold increase. This compares with a growth of sevenfold in the amounts spent on purchase of durable goods (not shown in the table). Maintenance costs were 5 per cent of total consumer outlays in 1929 and by 1965 had grown to 9 per cent.

Not all household operations services as defined by the Department of Commerce are included in the estimate for maintaining personal and household durable goods, e.g., domestic service, water, telephone, or most important, home repairs. At the same time much of the above includes services associated with rental housing, that is, electricity and

TABLE 22. PERCENTAGE OF HOUSEHOLD OWNERSHIP OF MAJOR DURABLES
BY INCOME GROUP, JANUARY, 1967

Total money income before taxes	One or more autos	Washing machine	Refrig- erator	Tele- vision set	Air con- ditioner	Dryer	Radio and phonograph equipment	Dish- washer
All households	78.6	71.8	84.6	93.2	20.5	30.1	35.3	11.6
Under \$1,000	24.5	46.9	75.4	68.9	4.3	2.8	6.3	0.6
\$1,000-\$1,999	39.4	51.4	73.4	80.0	6.8	4.2	8.1	0.7
\$2,000-\$2,999	56.9	58.7	80.4	90.6	10.5	9.0	13.6	1.4
\$3,000-\$3,999	71.6	61.5	79.2	93.2	12.9	13.2	19.2	2.2
\$4,000-\$4,999	76.8	66.3	80.0	93.4	14.7	20.7	27.3	4.4
\$5,000-\$5,999	87.6	70.3	83.4	96.7	18.9	25.9	32.0	5.4
\$6,000-\$7,499	90.9	78.3	87.2	96.7	21.6	34.7	39.0	7.0
\$7,500-\$9,999	94.4	81.3	89.0	98.4	28.5	47.0	48.2	13.3
\$10,000-\$14,999	96.1	85.9	92.0	98.4	33.7	56.6	58.7	27.4
\$15,000 and over	97.1	84.8	90.7	98.6	44.9	64.0	72.2	50.9

SOURCE: Based on U.S. Bureau of the Census, "Consumer Buying Indicators," *Current Population Reports*, Series P-65, No. 18, August 11, 1967, Tables 1 and 4.

TABLE 23. COST OF MAINTAINING PERSONAL AND HOUSEHOLD POSSESSIONS, 1929 AND 1965

<i>Personal consumption</i>	<i>1929</i>	<i>1965</i>
	<i>(billions of dollars)</i>	
<i>Total</i>	<i>77.2</i>	<i>431.5</i>
Costs of maintaining and using tangible wealth	4.1	37.5
Electricity	0.6	6.6
Gas	0.5	4.0
Auto repair	0.8	6.2
Auto insurance less claims paid	0.1	2.5
Tolls, road, bridge, etc.	^a	0.4
Auto gasoline and oil	1.8	15.1
Appliance and TV repairs, fire insurance, and other miscellaneous expenses	0.3	2.7
Percentage of total consumption	5	9

^a Less than \$50 million.

SOURCE: Derived from U.S. Department of Commerce, "The National Income and Product Accounts of the United States, 1929-1965," Table 2.5, pp. 44-49.

gas. Also, the figures for gasoline and oil include that paid for rental autos. All expenditures, however, are for personal use and do not include commercial or business use. Consumer interest, which is presently not included in national income, should be counted as a service cost, in this writer's view. The present amount of interest, as estimated from personal income tax returns, is approximately \$15 billion. This would raise total costs associated with maintaining durable goods to about \$53 billion, or about 12 per cent of total current consumption, inclusive of such interest.¹⁵

The discussion of costs of maintaining personally owned durable goods is necessarily fragmentary. The major gap in this discussion is that of social costs (or "externalities," as they are sometimes called). The most serious of the social costs pertain to the auto, including the inconveniences of highway construction and maintenance, air pollution, and traffic snarls, accidents and deaths. No attempt at such calculations is made in this study.

Growth in the Public Sector

The rise in the importance of government as it affects personal incomes, consumption, and the general welfare is perhaps the most marked shift in the composition of major income flows during the century. This is evident in the increase in payments to government via

taxes and contributions for social insurance on the one hand, and the rise in payments by government to individuals on the other hand. Contributions for taxes and insurance which totaled \$2.7 billion in 1929 by 1965 had grown to \$79 billion or nearly 30 times the earlier level. This meant that such contributions or payments to government had risen from about 3 per cent of personal incomes to 14 per cent. Nothing like such a major shift in the disposition of personal income has occurred over the years and most of it occurred since World War II (Table 24).

TABLE 24. DISPOSITION OF PERSONAL INCOME, 1929-1965

<i>Disposition</i>	<i>1929</i>	<i>1939</i>	<i>1950</i>	<i>1960</i>	<i>1965</i>
<i>(billions of dollars)</i>					
<i>Personal income</i>	<i>85.9</i>	<i>72.8</i>	<i>227.6</i>	<i>401.0</i>	<i>535.1</i>
<i>Payments to government</i>	<i>2.7</i>	<i>3.0</i>	<i>23.6</i>	<i>60.2</i>	<i>79.2</i>
Taxes	2.6	2.4	20.7	50.9	66.0
Social insurance	.1	.6	2.9	9.3	13.2
<i>Disposable income</i>	<i>83.3</i>	<i>70.3</i>	<i>206.9</i>	<i>350.0</i>	<i>469.1</i>
<i>Outlays</i>	<i>79.1</i>	<i>67.7</i>	<i>193.9</i>	<i>333.0</i>	<i>443.4</i>
Consumption	77.2	66.8	191.0	325.2	431.5
Transfers	1.8	.9	2.9	7.8	11.9
interest	1.5	.7	2.4	7.3	11.3
to foreigners	.3	.2	.5	.5	.6
Personal saving	4.2	2.6	13.1	17.0	25.7

SOURCE: Based on U.S. Department of Commerce, "The National Income and Product Accounts of the United States, 1929-1965," Table 2.1. In adding to personal income in this table, keep in mind that by accounting convention payments for social insurance are considered in the national accounts as a deduction from personal income even though taxes are included. Figures may not add because of rounding.

A counterpart of this shift (as far as personal income and consumption is concerned) is seen in the analysis of the source of personal income (Table 25). Transfers of cash to persons show the largest percentage rise by far of all major sources of income. These transfers of cash from government to persons increased to \$37 billion by 1965—as of early 1968 they were around \$53 billion or nearly sixty times the 1929 level. They have grown from about 1 per cent of all sources of income in 1929 to 7 per cent in 1965. They represent mostly pension and other payments from federal, state, and local governments to older people, and constitute approximately 30 per cent of the total sources of income of the aged.

As obligations to government have greatly increased, the discre-

TABLE 25. SOURCES OF PERSONAL INCOME, 1929-1965

Source	1929	1939	1950	1960	1965
	(billions of dollars)				
<i>Personal income</i>	85.9	72.8	227.6	401.0	535.1
<i>Earnings</i>	66.1	58.3	188.0	329.0	432.6
Wages	50.4	45.9	146.7	270.8	358.4
Other	.6	.6	3.8	12.0	18.5
Proprietor's	15.1	11.8	37.5	46.2	55.7
<i>Property</i>	18.4	12.0	27.4	52.6	75.9
Rent	5.4	2.7	9.4	15.8	18.3
Dividends	5.8	3.8	8.8	13.4	19.2
Interest	7.2	5.5	9.2	23.4	38.4
<i>Transfer payments</i>	1.5	3.0	15.1	28.5	39.7
From business	.6	.5	.8	1.9	2.6
From government	.9	2.5	14.3	26.6	37.1
Less personal contributions for social insurance	.1	.6	2.9	9.3	13.2

SOURCE: See Table 24, "National Income and Product Accounts," Tables 2.1 and 3.9. Figures may not add because of rounding.

tionary power over total personal income has lessened over the years. By contrast, within disposable income, the share devoted to personal consumption and savings has shown relatively little change at 94 per cent for personal outlays and 6 per cent for savings in both 1929 and 1965.

Resulting from the broad shifts in government activity as reflected in the changing sources and disposition of income is some redistribution of income and consumption that presumably is different from what it would have been if these major shifts had not occurred. The information needed, however, in order to determine the magnitude of such redistribution effects among households—taking into account both the differing taxes they pay and the varying benefits they receive—is woefully inadequate. Until such an analysis of redistribution effects is made, the broad aggregates will remain without essential appraisal.¹⁶

The essential difficulty with appraising these broad trends is that it is not possible with existing data (except by broad assumption) to know who gets what from public expenditures. Nor do we know the real distribution of tax burdens. It is well known, of course, that the income tax as actually paid is much less progressive than the schedule of nominal tax rates. For example, as Pechman points out, if incomes were taxed according to nominal rates without any exemptions, deduc-

tions, or other special allowances, then effective tax rates for each income group would begin at 14 per cent and rise to almost 70 per cent in the very highest brackets. But in consequence of all the various allowances, the average tax rate for any income group as a whole never rises above 30 per cent and actually begins to *decline* slightly for income groups above \$200,000.¹⁷

Apart from personal income taxes, the burden of all taxes is not fully known. Thus the extent to which business taxes are either passed on directly to consumers in higher prices or indirectly through lower wages, or not passed on at all by lower profits is a subtle and inconclusive area of economic analysis.

In place of a microanalysis to determine who pays for and who benefits from public expenditures, some notion of the nature of public expenditures is of help, so that the reader, if he is so inclined, may supply his own assumptions. We have grouped public expenditures in Table 26 by functional categories to suggest the broad intent or goals of public expenditures. It is not possible from these figures to measure how government expenditures in fact redistribute the national income among the various groups of households. The table does indicate, however, that over the recent decade, a considerable expansion has occurred in expenditures affecting "human capital" (education and health) and the sociophysical environment. The enormity of defense and space expenditures in the total requires no amplification.

While the rearrangement of federal budget figures in Table 26 may be more helpful than the official tabulations in examining and making more explicit the goals of public expenditures, they are still much too broad for any serious evaluation. Even figures for a metropolitan area may be too broad. Thus, the serious overcrowding and pressure on public facilities in particular sections of central cities (such as Anacostia in Washington, D.C.) may be obscured in the figures for a metropolitan area as a whole. However desirable, a substantial increase in public housing for particular *people* may put an added strain on already overstrained school and recreational facilities, as well as other community facilities, if the additions take place in particular *areas* of the city. In a particularly revealing column in *The Washington Post* (June 19, 1968), William Raspberry says: "The question is not one of the need for housing but of the necessity of locating new units in Anacostia." In the figures for a metropolitan area as a whole, an increase in moneys spent for public housing may look salutary as a socioeconomic indicator; but the essential imbalance of population in relationship to such figures would need to be examined much more closely.

The need for closer examination of federal aid is particularly true for increases in expenditures for health. There is little question that these expenditures have risen greatly. There is also little question that medical services have become increasingly available to the poor and the elderly. But not all details of such services may necessarily be wanted by patients, and, moreover, there has been an enormous increase in the cost of medical care partly resulting from increased federal assistance.

Therefore, in any study of public or private consumption, including the study of the balances within such expenditures as between different public goals and of the balances between public and private consumption goals, newer, more micro (more down-to-earth) analyses are needed.

The figures in Table 26 represent money costs, obviously. The study of the extent to which these costs have served the ends sought is a subject of great ferment today in and out of government. Such studies are still largely exploratory, but it is hoped that their methodology and results will have important implications in coming years for the evaluation of the impact of government policy on social change.

Time and Choice

There has been a considerable increase in interest in analysis of how time is spent. This interest by sociologists, economists, and others has ranged from considerations of changing hours of work, time spent on journeying to work, the extent and nature of leisure, or the analysis of the content of time divided between the direct or indirect pursuit of earnings, and other pursuits.

The problem is both simple and subtle. It is simple because there are clearly accepted units of time which make it possible to determine that various people in different times and places have allocated so many hours a day or year to working, sleeping, eating, and various other activities or inactivities. The subtlety intrudes as soon as one attempts to evaluate how time is spent in terms of irksomeness, leisure, "free time," unobligated time, etc. Needless to say, partly because of the unavoidable ambiguities in the definition of leisure or "free time" the results have been somewhat ambiguous. De Grazia, for example, has shown with some effectiveness that notwithstanding a considerable reduction in average hours of work as reported in official statistics, the amount of so-called "free time" has not appreciably increased because of (1) expansion in the number of women in the labor force; (2) considerable increase in part-time work by persons who cus-

TABLE 26. GOVERNMENT EXPENDITURES BY FUNCTION, 1956 AND 1966

Type of expenditure	1956			1966		
	Total	Federal	State and local	Total	Federal	State and local
			(millions of dollars)			
<i>Total</i>	107,433	71,866	35,567	224,605	142,855	81,750
<i>Human resource development</i>	18,192	2,373	15,819	47,659	7,062	40,597
Education	14,129	1,176	12,953	37,648	3,562	34,086
Health	4,063	1,197	2,866	10,011	3,500	6,511
<i>Welfare benefits</i>	19,945	15,904	4,041	49,237	40,554	8,683
Public assistance and relief	4,911	1,539	3,372	11,118	3,904	7,214
Unemployment	1,470	1,470	—	1,836	1,836	—
Old age and retirement	6,427	6,427	—	22,578	22,578	—
Disability and pension allowances	2,760	2,731	29	4,027	4,015	12
<i>Other</i>	4,377	3,737	640	9,678	8,221	1,457
<i>Recreation and culture</i>	563	50	513	1,440	208	1,232
<i>Housing, environment and utilities</i>	11,224	3,023	8,201	25,346	10,162	15,184
Housing	17	-6	23	1,146	712	434
Urban renewal	17	22	23	1,146	520	434
Public housing		-28			192	
Physical environment	9,442	2,325	7,117	20,748	8,023	12,725
Highways	7,381	827	6,554	15,894	4,249	11,645
Water	450	394	56	787	664	123
Air	266	188	78	1,014	921	93
Conservation and development of resources	1,345	916	429	3,053	2,189	864

Utilities	1,765	704	1,061	3,452	1,427	2,025
Transit	38	—	38	268	—	268
Electricity	-47	—	-47	-218	—	-218
Water and gas	145	—	145	212	—	212
Postal services	644	644	—	1,100	1,100	—
Sanitation	1,094	—	1,094	1,965	—	1,965
Other	-109	60	-169	125	327	-202
Regulation and safety	3,174	69	3,105	7,035	157	6,878
Police	1,409	—	1,409	3,015	—	3,015
Fire	773	—	773	1,457	—	1,457
Correction	498	30	468	1,174	66	1,108
Regulation of commerce and finance	494	39	455	1,389	91	1,298
National defense	41,290	41,113	177	62,695	62,303	392
Space	—	—	—	5,947	5,947	—
General government and foreign affairs	13,045	9,334	3,711	25,246	16,462	8,784
General government	10,898	7,187	3,711	22,385	13,601	8,784
International affairs and finance	2,147	2,147	—	2,861	2,861	—

SOURCES: These figures have been regrouped from data on government expenditures by function as presented in the National Economic Accounts of the Office of Business Economics, Department of Commerce. Data for 1976 are from their *Survey of Current Business* for July, 1967, Table 3.10, p. 29; and for 1956 from their publication "The National Income and Product Accounts of the United States, 1929-1965," Table 3.10, p. 63. A number of the items in the table are on a net basis in which receipts for services rendered are deducted from government outlays. The most important of these is the line for postal services, indicating that government outlays exceed postal receipts. The few negative figures in the table indicate in these instances that receipts exceeded outlays.

The large figure for "Other" in the category of "welfare benefits" includes subsidies and supports for the agricultural sector of the economy, which, as is well known, do not in large part go to needy farmers but to the very large farm enterprises.

tomarily do not work full time; (3) increase in moonlighting; (4) probable increase in time spent journeying to work; and (5) increase in work around the home.¹⁸

Our interest in time in this report is mainly concerned with how it relates to the broad subject of choice. While it is undoubtedly true that the range of choice among goods and services and investments has markedly increased in recent decades, knowledge of all the varying costs of these alternatives is itself a costly and difficult process.

One fundamental element of cost, largely neglected in the study of household behavior, is that of time. Largely in consequence of work undertaken by such economists as Jacob Mincer and Gary Becker, there has been provided a sharpened focus on the analysis of time in terms of cost.¹⁹

According to this approach, commodities and income are given an extended concept, by including the cost of time. The concept of commodities is broadened by including the money price (usually market price) and the time required to acquire and consume the commodity. The concept of income is broadened by distinguishing between earnings for which working time is important and other sources of income for which such time is of much less importance. It is recognized in this approach that work-time may occasionally be a form of "consumption" to the extent that the job in itself is a source of satisfaction and pleasure.

One advantage of this approach is that it provides some perspective on the concept of consumption, which we essentially avoided defining at the outset of this study. We can conceive, according to the Becker approach, of two activities, each constituting an abstract limiting condition: "pure" work which contributes only to earnings and nothing to satisfaction (or consumption) *per se*, and "pure" consumption which contributes nothing to earnings only to satisfaction (presumably "leisure"). In between are the intermediate "commodities" or activities, which contribute (directly and indirectly) *both* to earnings and consumption, e.g., food, sleep, durable goods, education, an enjoyable job, even a vacation—in fact, the range of most commodities.

More important, this approach gives promise to providing a sharpened analysis of the choices among consumption goods and as between consumption and work. Two variables central to this approach are: (1) market prices of goods and services, and (2) earnings rates, which not only measure the earnings-time required to pay the money prices, but put a cost on the value of time for persons with differing wage rates. These two variables considered *jointly* (i.e., relative to one an-

other) provide a basis for determining *changes* in choices that have occurred over long periods, and *differences* in a given period among households with differing earnings.

For example, one of the most significant trends in the U.S. economy in the first half of this century has been the decline in the hours worked in given types of jobs, and the rise in wage rates. According to this approach, a rise in wage rates per se would have induced a rise in hours worked. In fact, however, the opposite occurred, because relative market prices of time-intensive "recreation" goods (e.g., television sets and vacations) fell even more than the rise in wage rates.

The decline in hours has leveled off in recent decades, consistent with the fact that the decline in market prices of "recreation" goods relative to the rise in wages had been more rapid in the earlier than in the latter half of this century.

This approach also seeks to tie together the increased labor force participation of women with the increase in purchase of labor-saving appliances and other consumption trends that save housework time (such as quick dinners in and out of the home). The rise in earnings rates for women has increased the value of their working time, which taken together with the relative decline in market prices of household durables and quick preparation foods has induced, according to this approach, an increase in entry of women into the labor force and increased purchases of appliances.

Apart from trends over time, the theory attempts to explain why people in relatively high earnings brackets tend to have a higher purchase rate of goods whose market price is high but time cost is low, such as plane transportation. Other examples are summer camps for children and night-clubbing (which also takes time but not working time).

While various approaches to the study of time imply the need for more information on the allocation of time, the incisiveness of this particular approach requires more than merely "time budgets." It requires that such information also be coupled with data on earnings, as well as other sources of income, in order to separate the effect on consumption from income that takes time and income that does not. In addition, these time budgets must be interrelated with the traditional type of consumption budget in order to rank goods by their relative "time intensities" involved in their use or acquisition. This poses a difficult but challenging task for our information system.

In concluding this section, we would like, with some diffidence, to ask for a somewhat broadened approach. In the Becker analysis con-

sideration is given largely to the two limiting conditions of "pure" work and "pure" consumption as applied to a *current* picture of consumption and work. We would add the concept of investment (including tangible, financial, and "intangible" such as education). This implies that time must be considered not only in a very current sense, but over the time horizon which can include major phases of the life span. Indeed, in other highly significant studies, Becker gives a central place to such considerations²⁰ and it is hoped they might be integrated more in the study of the allocation of time. This broadened view of time to include study of households over their life cycle, or of choices that have implications for the family's *future* as well as current earnings and consumption, will pose an even more severe strain on our information system.

ANTICIPATING EFFECTS OF CONSUMER BEHAVIOR ON THE ECONOMY

The focus in the main body of the chapter was on questions of (1) adequacy of income and consumption, and (2) on the complexity of household choices. Both are concerned essentially with consumer welfare either under conditions of deprivation or affluence. In this section we discuss another type of question. Instead of seeking to determine how well society takes care of its citizens and how well they take care of themselves, we ask what impact does household behavior have upon society?

Consumer preferences and behavior, no matter how conditioned, have long-run and short-run effects on the economy. This is a large subject indeed, and we focus on only one aspect: that associated with short-run effects. Even this is a large subject and discussion of this, too, we must limit considerably as will be noted as we proceed.

Figure 3 provides some perspective on the problem. (Data on which the figure is based are found in Reference Table D at the end of the chapter.) As shown in the right-hand panel of the figure, there has been a *secular* stability of savings as a percentage of disposable income. Except for certain sharp short-run changes, this percentage has moved within a narrow range above and below 6 per cent. This secular stability has persisted notwithstanding a substantial increase in personal taxes, rising from less than 3 per cent nearly forty years ago to about 13 per cent at the present time. (See left panel of the figure.)

Our focus for the moment, however, is on the short-run changes in the savings rate. The very large swings have been associated with the

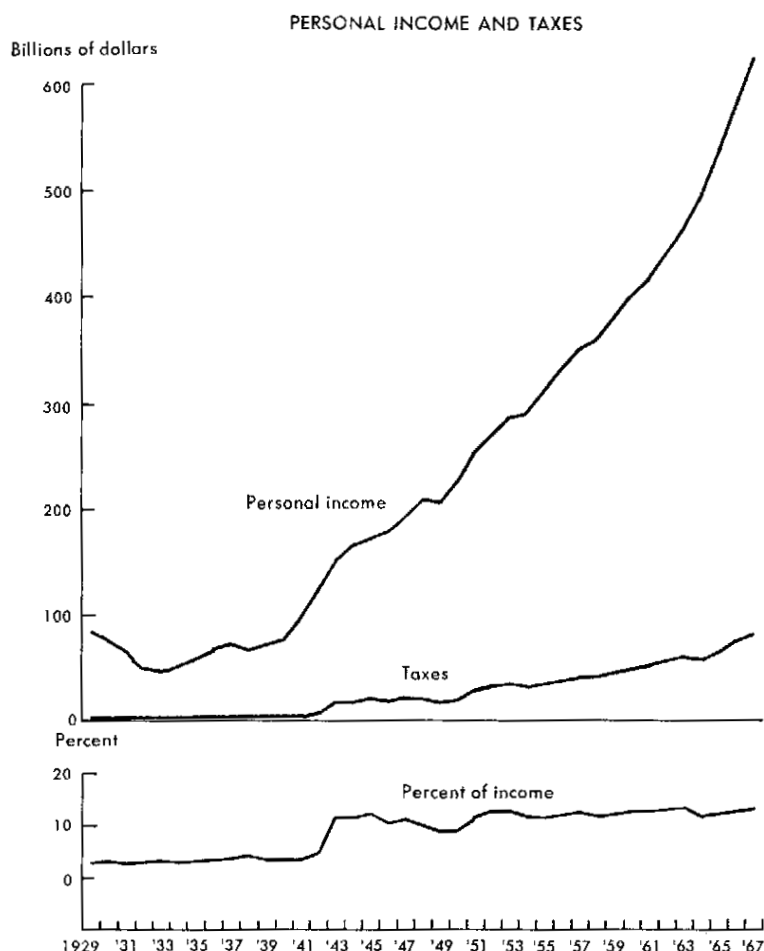
Depression in the 1930's and World War II. During the 1930's the very severe drop in income was accompanied by a pronounced fall in the rate of savings to negative levels, as spending in the effort to maintain living standards exceeded current incomes, and people either spent part of their assets or borrowed, or both. An almost similar, but much shorter-lived, drop in the rate of savings occurred in the 1938 recession. During World War II, the rate of savings rose to unprecedented levels as output and buying of many goods, particularly consumer durable goods, was sharply curtailed. In the period since World War II, changes in rate of savings reflected less cataclysmic forces, and were more in line with present notions of consumer behavior. In 1950 and again in 1954-1955, for example, the rate of savings dipped as credit and cash buying of autos and other durables greatly accelerated.

Following these increases in buying of durables (and associated decreases in the rate of savings), in 1951 and again by 1958 the savings rate rose as buying of these goods was sharply reduced. The increase in the saving rate in 1967 accompanied, among other things, a contracted rate of buying of autos.

Because changes in the savings rate in recent years have been associated with swings in purchase of durables, much research on consumer behavior has focused on understanding and, if possible, anticipating such swings. The efforts of households to distribute their expenditures over time—and to alter their timing—deciding when and when not to make a major purchase—i.e., before, after, or during a particular month or year, is a central feature of these swings. These alterations in timing, which produce fluctuations in consumption, is one of the prime causes of fluctuations in total GNP. They take the form of postponing or advancing the timing of a major purchase. If consumers in general have postponed such purchases, there is a cyclical drop; if accelerated, a cyclical rise.

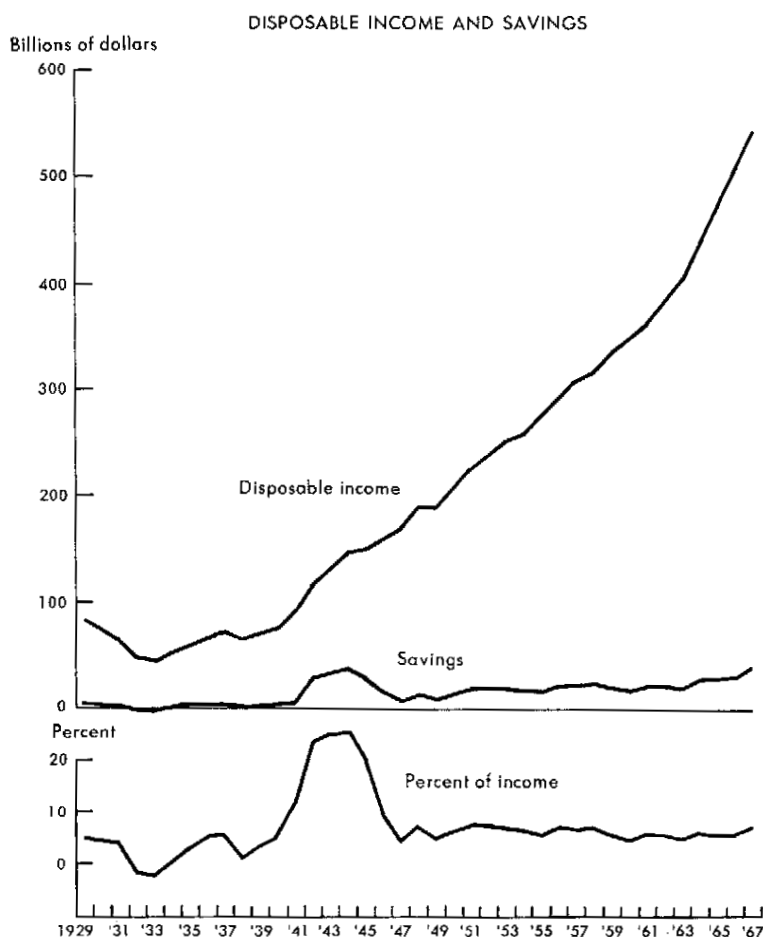
Recently research has been undertaken in the area of understanding and anticipating such shifts in major purchase decisions—in particular, the survey work on consumer buying anticipations. Many factors underlie such alterations in timing which may be related to actual or expected changes in personal finances or to the condition of particular durable goods. Indeed, a myriad of reasons may propel persons toward or set up barriers to major purchase decisions. Notwithstanding the complexity of motivation possibly causing these fluctuations, the interesting fact is that general tendencies are observable for a broad profile of persons and households to curtail at one time or increase at other times the purchase of a major durable good. Such general

FIGURE 3. INCOME, TAXES, AND SAVINGS, 1929-1967



tendencies have been evident during the postwar periods of major swings in the savings rate throughout the country, in all broad income groupings, and including those with increases as well as decreases in income.

While research on such behavior is a long way from explaining the sharp short-run changes (though more successful in explaining secular growth in consumer durable goods with secular growth in income), considerable effort and some significant progress has been made in an

FIGURE 3. INCOME, TAXES, AND SAVINGS, 1929-1967 (*cont.*)

NOTE: This chart is plotted on an arithmetic scale.

SOURCES: See notes to Reference Table D, pp. 522-523.

effort to measure buying anticipations. The purpose of such measurement is to see whether forces are observable through household interviews that might foreshadow important changes in the rate of buying.

Among the most notable approaches in this field include that pioneered by George Katona, presently carried forward at the Survey Research Center at the University of Michigan, and the work at the Bu-

reau of the Census under the consultative guidance of F. Thomas Juster.

Katona's work centers on the study of attitudes, including such attitudes as personal financial well-being (e.g., whether persons consider or expect themselves to be better off financially than a year ago); expectations about changes in general; business conditions; market conditions for household goods (is this a good time to buy?); and buying intentions (e.g., intend to buy a house or car, etc., within the next twelve months).

The underlying theory that justifies this kind of study is the alleged rise in the discretionary "power" of U.S. consumers.²¹ It has resulted from (1) expansion in incomes to levels well above subsistence standards for a broad mass of the population; (2) widespread increase in asset holdings, which came about largely during World War II but continued in the ensuing period; (3) extensive use of instalment credit; (4) widespread expenditures for durable goods; and (5) increase in economic intelligence, or awareness by a sizable part of the population of changes in business conditions which can contribute to a "social contagion" when signs of change in business occur, and result in widespread increases or decreases in consumption. The first four points are well grounded in fact; the fifth point is in large part assumed.

Katona and his associates, particularly Eva Mueller, constructed a time series (largely quarterly and dating back to 1953) of an aggregate index based on answers to such attitudinal type questions. When optimistic expectations about personal finances or general business or particular market conditions rose, the index would be expected to foreshadow a rise in purchases and vice versa. This index was dramatically successful in preceding the 1954-1955 boom and 1957-1958 recession in buying of consumer durables. Yet when analysis was made of particular households, those with optimistic attitudes were not necessarily the buyers during the booms, nor were the pessimists predominant among the nonbuyers during the recessions. A surprisingly large literature developed concerning this seeming paradox,²² but we cannot examine it here.

The main advantage of the attitude data, apparently, is that they may catch changes in consumer sentiment that affect the purchase probabilities of a broader group than the relatively few who (as indicated by their stated intentions) are very near to purchase but who for random reasons may not be able to fulfill their intentions. Even if few persons are able to perform an act in a given time it may be possible to detect influences among the many (through their attitudes) which propel only the few.

The work of Juster initially focused on measurement of buying intentions, *per se*. Data for such measurements were based on changes in the proportion of households which expressed positive intentions to purchase an auto or household durable within the next three, six, or twelve months. The difficulties with this approach stemmed from the fact that the actual buying of durables (as observed in successive surveys) was accounted for largely by nonintenders. As a consequence, and contrary to Katona's attitude index, the intentions data *per se* tended to be doubtful predictors of aggregate changes in buying of durables. At the same time, and again contrary to the attitude index, analysis of individual households showed that if a person was an "intender," there was a very high probability he would buy an auto or other durable in the period ahead. Unfortunately, mainly because intenders were such a small fraction of all respondents, the more important proposition—namely, if a person bought was there a high probability that he had been an "intender" in earlier survey?—was not true.

In recent years, largely in order to sharpen the measurement of consumer anticipations, a new approach has been instituted at the Census Bureau under Juster's leadership. Following earlier pilot surveys, the Census Bureau in September, 1967, began quarterly publication of a report on Consumer Buying Indicators.²³ The main change in this approach, aside from ancillary questions on income and income changes and on the list of durable goods, is the shift from measuring an expressed intention to buy, to measuring the subjective probabilities of purchase of each household. A respondent is asked to select his chances of purchasing given items, within given time periods, from an answer sheet scaled from 0 to 100. The mean probability for a group of households is the average value reported by these households. The survey in its present form is still essentially exploratory. A principal advantage observed from results of pilot surveys has been that the probability scale provides a much wider spread of responses than did the intender-type surveys. That is to say, in the intender-type surveys the responses were distributed dichotomously: divided sharply between the tiny fraction who were intenders, and a large amorphous remainder who either didn't have an intention or said definitely they didn't intend to buy. In the new approach the frequency distribution of responses according to their probability of making a major purchase is much more spread out.²⁴

Work is going forward in improving this experimental survey dealing with different time horizons, different items of major expenditures, and including different financing arrangements.²⁵ As data accumulates and successive surveys are matched, it should be possible to provide

substantial tests of the relation between changes in mean purchase probabilities and changes in aggregate purchases. It may also be possible to press further and actually observe the act of postponing or accelerating the timing of purchase decisions by observing shifts of *given* individuals in their purchase probabilities from high to low or vice versa.

KNOWLEDGE AND THE CONSUMER: CONCLUDING REMARKS

The choices households must make over the life span have become increasingly complex as alternatives need to be selected among careers, houses, durables, colleges, personal finance and insurance arrangements, and capital market possibilities. Trends in consumer behavior toward increased activities of an investment nature, including both the accumulation of tangible and financial assets and the increased expenditures of time and money (public and private) for higher education and job training, have all contributed to the complexity of consumer choice. They have correspondingly heightened the need for specialized information. How can this knowledge best be provided?

The sources of information and regulation to enlighten and protect the consumer, in order to minimize the risks to his health, safety, and to his income include: business advertising, consumer organizations, federal, state, and local governments, and the consumer himself. It is much beyond the scope of this chapter to undertake an analysis of the efficacy of each of these sources and a determination of where increased efforts are needed.

It is probably too costly and highly impractical, however, to expect the individual consumer to have the knowledge necessary or the "individual laboratory" available, in the words of George Stigler, to search out the best among alternative choices of major expenditures of time and money during each of the major phases of investment and consumption over the life span, as well as in the purchases vital to day-to-day living.

It is probably safe to say that as the trends toward complexity of choice continue the roles of private and public organizations will become more challenging: for business, to increase the potential functions of advertising (in terms of consumer knowledge) beyond merely identifying the major sellers in each market; for government, to provide a growing role of consumer protection in health, safety, and personal finance; and for other organizations, including testing organiza-

tions and cooperatives, to enable consumers to pay for the services they require but cannot provide individually.

The present ferment in this area of consumer information and protection within government and business, owing largely to the strong prodding of private citizens, presents an augury of dynamic change in a complex and significant area of human behavior.

Thus knowledge needed *by* the consumer whether provided individually and/or collectively is likely to present an increasing challenge for policy and research. What of knowledge *about* the consumer?

We have stressed the need for understanding the life span and the changing requirements faced over that span.

We have stressed that consumer investment decisions, for example, the purchase of tangible assets, may have destabilizing effects on the economy and that anticipation of changes in such decisions has become an important area of research on consumer behavior.

We are aware that these aspects of consumption require much more information, particularly of a longitudinal sort, than is now available and will probably entail a significant change in approach to consumer surveys.

But we wish to end with a caveat and a challenge. A caveat because we feel that inordinate and perhaps unnecessary demands for information will be demanded of households in the years ahead. There is a tendency to want to know everything, from everyone, from cradle to grave. We believe this is not only costly in the usual sense of resources needed to collect the data, but much more important in the burden on respondents, in the waste of information proliferation, and in the danger of abuse.

Our challenge then is to all in this profession to seek the pertinent, the significant; to find ways through pilot surveys and multivariate analysis—to determine through trial and analysis what factors are important for information gathering, and how small our samples can be kept. That we need more information from households is unquestioned, that the demands for information should not go on without limit is the challenge.

NOTES

1. The measure of "actual" GNP used here could be sharpened to show "potential GNP," or the output that would be possible given fuller utilization of manpower and capital capacity. This would not only show performance

in relation to the past but in relation to our fullest potential. (See estimates of potential GNP in the 1968 *President's Report of the Council of Economic Advisers*, p. 61.) It would be useful also to show the changes in prices and in the degree of unemployment but these facets, while important to a study of living conditions, are not necessarily the specific subject of this chapter.

2. Galloway, L. E., "The Foundations of the 'War on Poverty,'" *American Economic Review*, March, 1965. See also further discussions by H. Aaron and L. E. Galloway in the *American Economic Review*, December, 1967, p. 1243 *et seq.*
3. See, for example, Miller, S. M., M. Rein, P. Roby, and B. M. Gross, "Poverty, Inequality, and Conflict," *The Annals of the American Academy of Political and Social Science*, September, 1967, for a recent discussion.
4. For attempts to measure incidence of poverty based on estimated standard budgets, see Ornati, Oscar, "The Poverty Band and the Count of the Poor," in *Inequality and Poverty*, E. Budd, ed., W. W. Norton Co., New York, 1967. Based on contemporary standards, a decline since the Depression is evident in number below a minimum subsistence level but no change since 1941. See material on upgrading of standards in later discussion in this chapter.
5. "City Worker's Family Budget for A Moderate Living Standard," 1966, Bulletin No. 1570-1, U.S. Bureau of Labor Statistics, Washington.
6. Lamale, Helen H., "Levels of Living Among the Poor," Report No. 238-12, U.S. Bureau of Labor Statistics, Washington, August, 1965.
7. See, for example, Caplovitz, D., *The Poor Pay More*, Free Press of Glencoe, New York, 1963. For a finding of relatively little discrimination, see "Comparison of Prices Paid for Selected Foods in Chain Stores in High and Low Income Areas of Six Cities," U.S. Department of Agriculture, Washington, June, 1968.
8. See Projector, D. S., and G. S. Weiss, "Survey of Financial Characteristics of Consumers," Federal Reserve Board, August, 1966.
9. Miller, H., *Income Distribution in the United States*, A 1960 Census Monograph, U.S. Bureau of the Census, Washington, 1966, chap. 6.
10. Lansing, J. B., and J. Sonquist, "A Cohort Analysis of Changes in the Distribution of Wealth," Conference on Research in Income and Wealth, March, 1967, to be published by the National Bureau of Economic Research.
11. Projector, D., "Survey of Changes in Family Finances—1963," to be published by the Federal Reserve Board.
12. Modigliani, F., and A. Ando, "Tests of the Life Cycle Hypothesis of Savings," *Bulletin of the Oxford University Institute of Statistics*, 1957, p. 105.
13. The estimates are quite rough representing: for housing and land, and miscellaneous holdings, extrapolations from 1958 and 1962 from Goldsmith, R. W., R. E. Lipsey, and M. Mendelson, *Studies in the National Balance Sheet of the United States*, vol. II, National Bureau of Economic Research, New York, 1963, Table III-1; and Juster, F. T., *Household Capital Formation and Financing, 1897-1962*, National Bureau of Economic Research, New York, 1966, Table B-1; for autos owned by households, estimates are derived and extrapolated from data provided in Friedman, C. S., "The Stock of Automobiles in the United States," *Survey of Current Business*, October, 1965, Table 5 (market value data); and Friedman, C. S., "Auto Ownership by Households in Mid-1964," *Survey of Current Business*, October, 1966; for major household durables, estimates are by the author in cooperation with the Office of Business Economics, and based on the depreciated value of accumulated purchases of furniture, appliances, televisions, radios, and minor durables.

14. See Lampman, R. J., *The Share of Top Wealth-Holders in National Wealth*, National Bureau of Economic Research, New York, 1962, which studied trends from 1922 to 1956. See pp. 197 *et seq.* Data published by the Internal Revenue Service indicate that top wealth holders (holders of gross estates of \$60,000 or more) increased from about 2 per cent of the adult population in 1953 to just less than 4 percent in 1962. See "Personal Wealth, Estimated from Estate Tax Returns," *Statistics of Income—1962*, Internal Revenue Service, Washington, May, 1967, p. 57.
15. A full accounting of the services received in relation to the costs paid for durables is a difficult matter. The costs shown above are very broadly estimated and probably on the whole are on the low side. For a very interesting effort to calculate the services less costs (or net income) obtained from durables, see Juster, F. T., "Household Capital Formation and Financing 1897-1962," Appendix B, National Bureau of Economic Research, New York, 1966. The estimate of consumer interest is from "Preliminary Report, Statistics of Income—1966, Individual Income Tax Returns," Publication No. 198 (1-68), U.S. Treasury Department, Washington, 1968.
16. For recent attempts at such evaluation, largely by assumption, see: "Tax Burdens and Benefits of Government Expenditures By Income Class, 1961 and 1965," Tax Foundation, New York, 1965; Gillespie, W. Irwin, "Effect of Public Expenditures on the Distribution of Income" in Robert A. Musgrave, ed., *Essays in Fiscal Federalism*, The Brookings Institution, Washington, 1965; Bishop, George A., "Income Redistribution in the Framework of the National Income Accounts," *National Tax Journal*, December, 1966, pp. 378-390.
17. Pechman, J., *Federal Tax Policy*, The Brookings Institution, Washington, 1966, p. 65 and chart 4-2, p. 66, based on analysis of 1962 tax returns.
18. De Grazia, Sebastian, *Of Time, Work and Leisure*, Twentieth Century Fund, New York, 1962.
19. Mincer, J., "Market Prices, Opportunity Costs, and Income Effects" in *Measurement in Economics*, Stanford University Press, Stanford, 1963; and Becker, G., "A Theory of the Allocation of Time," *The Economic Journal*, September, 1965. The latter article undertakes to tie together theoretically and to some extent empirically the work along this line.
20. Becker, G., *Human Capital*, National Bureau of Economic Research, New York, 1964; and *Human Capital and the Personal Distribution of Income*, University of Michigan Press, Ann Arbor, 1967.
21. Katona, G., *The Powerful Consumer*, McGraw-Hill, New York, 1960.
22. For a recent defense of this work, see Katona, G., "Anticipations Statistics and Consumer Behavior," *The American Statistician*, April, 1967.
23. Series P-65 of *Current Population Reports*.
24. See Juster, F. Thomas, "Consumer Buying Intentions and Purchase Probability: An Experiment in Survey Design," *Journal of the American Statistical Association*, September, 1966.
25. For interesting recommendations on future work in this and related areas (particularly in emphasizing the need for more longitudinal studies), see Ferber, Robert, "Anticipations Statistics and Consumer Behavior," *The American Statistician*, October, 1966. For an overview of the vast literature on the subject of consumer behavior, also by Ferber, see "Research on Household Behavior," *Surveys of Economic Theory*, vol. III, American Economic Association and Royal Economic Society

Reference Tables

REFERENCE TABLE A. GROSS PRODUCT, PRODUCTIVITY,
AND CONSUMPTION, 1900-1965

<i>Year</i>	(1) <i>Gross Product (1958 \$ billions)</i>	(2) <i>Personal consumption (1958 \$ billions)</i>	(3) <i>Consumption per dollar of Gross Product</i>	(4) <i>Consumption per capita</i>	(5) <i>Gross Product per man-hour</i>
1900	79.8	48.3	.61	\$ 634	29.2
1901	89.0	54.2	.61	698	31.1
1902	89.9	54.7	.61	689	30.0
1903	94.3	57.9	.61	717	30.7
1904	93.1	58.7	.63	714	30.6
1905	100.0	62.0	.62	740	31.4
1906	111.6	68.9	.62	806	33.8
1907	113.4	70.2	.62	806	33.7
1908	104.0	65.8	.63	740	32.0
1909	116.8	73.0	.63	806	34.4
1910	120.1	74.3	.62	804	34.4
1911	123.2	77.9	.63	829	34.6
1912	130.2	79.9	.61	838	35.4
1913	131.4	82.6	.63	848	35.5
1914	125.6	81.6	.65	822	34.3
1915	124.5	80.1	.64	797	34.2
1916	134.3	87.4	.65	857	34.7
1917	135.2	85.5	.63	827	33.6
1918	151.8	85.1	.56	823	35.5
1919	146.4	88.8	.61	850	36.9
1920	140.0	93.2	.67	875	35.7
1921	127.8	99.2	.78	914	35.8
1922	148.0	102.8	.69	933	39.3
1923	165.9	112.1	.68	1,002	41.2
1924	165.5	120.5	.73	1,055	41.9
1925	179.4	116.9	.65	1,009	43.9
1926	190.0	126.5	.67	1,076	45.1
1927	189.8	129.4	.68	1,087	45.3
1928	190.9	132.3	.69	1,097	45.2
1929	203.6	139.6	.69	1,145	47.3
1930	183.5	130.4	.71	1,059	45.1
1931	169.3	126.1	.74	1,016	45.0
1932	144.2	114.8	.80	919	42.4
1933	141.5	112.8	.80	897	41.7
1934	154.3	118.1	.77	934	46.2
1935	169.5	125.5	.74	985	48.4
1936	193.0	138.4	.72	1,080	51.4
1937	203.2	143.1	.70	1,110	51.5
1938	192.9	140.2	.73	1,079	52.7
1939	209.4	148.2	.71	1,131	54.8

REFERENCE TABLE A (cont.)

Year	(1) Gross Product (1958 \$ billions)	(2) Personal consumption (1958 \$ billions)	(3) Consumption per dollar of Gross Product	(4) Consumption per capita	(5) Gross Product per man-hour
1940	227.2	155.7	.69	\$1,178	57.4
1941	263.7	165.4	.63	1,240	60.9
1942	297.8	161.4	.54	1,197	61.5
1943	337.1	165.8	.49	1,213	63.0
1944	361.3	171.4	.47	1,238	67.2
1945	355.2	183.0	.52	1,308	70.0
1946	312.6	203.5	.65	1,439	67.7
1947	309.9	206.3	.67	1,431	67.9
1948	323.7	210.8	.65	1,438	70.2
1949	324.1	216.5	.67	1,451	71.9
1950	355.3	230.5	.65	1,520	78.5
1951	383.4	232.8	.61	1,509	82.1
1952	395.1	239.4	.61	1,525	84.5
1953	412.8	250.8	.61	1,572	88.4
1954	407.0	255.7	.63	1,575	90.8
1955	438.0	274.2	.63	1,659	94.7
1956	446.1	281.4	.63	1,673	94.6
1957	452.5	288.2	.64	1,683	97.2
1958	447.3	290.1	.65	1,666	99.4
1959	475.9	307.3	.65	1,735	103.4
1960	487.7	316.1	.65	1,749	104.6
1961	497.2	322.5	.65	1,755	107.4
1962	529.8	338.4	.64	1,813	113.0
1963	551.0	353.3	.64	1,865	116.7
1964	580.0	373.8	.64	1,946	120.7
1965	614.4	396.2	.64	2,036	124.2

SOURCES:

Col. (1) and (2)—Years from 1909 to the present are from the Office of Business Economics. 1900–1908 are based on data from Kendrick, John W., *Productivity Trends in the United States*, National Bureau of Economic Research, New York, applying the 1909 ratio to OBE data to earlier data.

Col. 3—The calculated ratio of Personal Consumption (Col. 2) to Gross Product (Col. 1).

Col. 4—Personal consumption divided by the total population of the United States, based on data from the *Current Population Reports*, Bureau of the Census.

Col. 5—This series from 1909 on represents labor productivity for the total private economy derived by the Bureau of Labor Statistics. 1900–1908 are based on data from Kendrick for the total private domestic economy, applying the 1909 ratio to BLS data to earlier data.

REFERENCE TABLE B. EXPECTED LIFETIME EARNINGS
FOR MALES IN 1959, ALL EDUCATION LEVELS

<i>Age</i>	<i>White</i>	<i>Nonwhite</i>
<i>(thousands of dollars)</i>		
18 years	1,570	1,208
20 years	2,434	1,674
22 years	3,215	2,088
24 years	3,914	2,452
26 years	4,530	2,765
28 years	5,065	3,027
30 years	5,516	3,237
32 years	5,866	3,383
34 years	6,125	3,473
36 years	6,314	3,520
38 years	6,454	3,539
40 years	6,564	3,541
42 years	6,620	3,506
44 years	6,621	3,436
46 years	6,585	3,349
48 years	6,530	3,262
50 years	6,472	3,193
52 years	6,404	3,133
54 years	6,319	3,076
56 years	6,216	3,020
58 years	6,095	2,967
60 years	5,956	2,916
62 years	5,800	2,867
64 years	5,626	2,820

SOURCE: U.S. Bureau of the Census, *Present Value of Estimated Lifetime Earnings*, Technical Paper No. 16. Table 1, Page 7. U.S. Government Printing Office, Washington, D.C., 1967.

REFERENCE TABLE C. EXPECTED LIFETIME EARNINGS
FOR MALES IN 1959, 4 YEARS OF COLLEGE

Age	White	Nonwhite
(thousands of dollars)		
18 years	2,236	2,048
20 years	3,124	2,585
22 years	3,998	3,095
24 years	4,857	3,577
26 years	5,702	4,031
28 years	6,532	4,458
30 years	7,349	4,858
32 years	8,173	5,248
34 years	8,993	5,619
36 years	9,784	5,951
38 years	10,522	6,223
40 years	11,186	6,416
42 years	11,815	6,521
44 years	12,402	6,556
46 years	12,915	6,542
48 years	13,321	6,500
50 years	13,589	6,450
52 years	13,734	6,381
54 years	13,769	6,287
56 years	13,694	6,166
58 years	13,510	6,018
60 years	13,216	5,845
62 years	12,812	5,645
64 years	12,298	5,418

SOURCE: U.S. Bureau of the Census, *Present Value of Estimated Lifetime Earnings*, Technical Paper No. 16. Table 1, Page 10. U.S. Government Printing Office, Washington D.C., 1967.

REFERENCE TABLE D. INCOME, TAXES, AND SAVINGS, 1929-1967

Year	Personal Income and Taxes			Disposable Income and Savings		
	Personal income	Taxes	Percentage of income	Disposable income	Savings	Percentage of income
	(billions of dollars)			(billions of dollars)		
1929	85.9	2.6	3.0	83.3	4.2	5.0
1930	77.0	2.5	3.2	74.5	3.4	4.6
1931	65.9	1.9	2.9	64.0	2.6	4.1
1932	50.2	1.5	3.0	48.7	-.6	-1.2
1933	47.0	1.5	3.2	45.5	-.9	-2.0
1934	54.0	1.6	3.0	52.4	.4	.7
1935	60.4	1.9	3.1	58.5	2.1	3.6
1936	68.6	2.3	3.4	66.3	3.6	5.4
1937	74.1	2.9	3.9	71.2	3.8	5.3
1938	68.3	2.9	4.2	65.5	.7	1.1
1939	72.8	2.4	3.3	70.3	2.6	3.7
1940	78.3	2.6	3.3	75.7	3.8	5.1
1941	96.0	3.3	3.4	92.7	11.0	11.9
1942	122.9	6.0	4.9	116.9	27.6	23.6
1943	151.3	17.8	11.8	133.5	33.4	25.0
1944	165.3	18.9	11.4	146.3	37.3	25.5
1945	171.1	20.9	12.2	150.2	29.6	19.7
1946	178.7	18.7	10.5	160.0	15.2	9.5
1947	191.3	21.4	11.2	169.8	7.3	4.3
1948	210.2	21.1	10.0	189.1	13.4	7.1
1949	207.2	18.6	9.0	188.6	9.4	5.0
1950	227.6	20.7	9.1	206.9	13.1	6.3
1951	255.6	29.0	11.3	226.6	17.3	7.6
1952	272.5	34.1	12.5	238.3	18.1	7.6
1953	288.2	35.6	12.4	252.6	18.3	7.2
1954	290.1	32.7	11.3	257.4	16.4	6.4
1955	310.9	35.5	11.4	275.3	15.8	5.7
1956	333.0	39.8	12.0	293.2	20.6	7.0
1957	351.1	42.6	12.1	308.5	20.7	6.7
1958	361.2	42.3	11.7	318.8	22.3	7.0
1959	383.5	46.2	12.0	337.3	19.1	5.6

REFERENCE TABLE D (cont.)

Year	Personal Income and Taxes			Disposable Income and Savings		
	Personal income	Taxes	Percentage of income	Disposable income	Savings	Percentage of income
1960	401.0	50.9	12.7	350.0	17.0	4.9
1961	416.8	52.4	12.6	364.4	21.2	5.8
1962	442.6	57.4	13.0	385.3	21.6	5.6
1963	465.5	60.9	13.1	404.6	19.9	4.9
1964	497.5	59.4	11.9	438.1	26.2	6.0
1965	537.8	65.6	12.2	472.2	27.2	5.8
1966	584.0	75.2	12.9	508.8	29.8	5.9
1967	626.3	81.7	13.0	544.6	38.7	7.1

SOURCE: "The National Income and Product Accounts of the United States, 1929-1965" and recent issues of the *Survey of Current Business*, U.S. Department of Commerce.

NOTE: Definitions, which may be obtained in more detail from official national income sources (principally "National Income 1954 Edition" and "The National Income and Product Accounts of the United States: Revised Estimates 1929-64," *Survey of Current Business*, August 1965) are briefly as follows:

1. Personal income includes all types of money income (from earnings and property); and certain types of "imputed income" or income in kind including rental income of home owners, wages in kind, and imputed interest paid by banks on checking accounts; and transfer payments.
2. Taxes include mainly personal income and property taxes.
3. Disposable income represents personal income less taxes, and savings represents a statistical residual after deduction of consumption expenditures from disposable income. While savings are *calculated* in the national accounts as a residual it is by no means clear that savings are in fact regarded as a residual by many classes of consumers.

10. THE DEFINITION AND MEASUREMENT OF LEISURE

Philip H. Ennis

OF ALL THE great categories of life, leisure is surely one of the most untidy. As individual experience or as behavior of large numbers of people, it is more diverse, more resistant to secure definition and measurement than most other aspects of social life. The variety of everyday words relating to leisure—recreation, relaxation, idleness, fun, play, games, entertainment, and diversion—underscores the complexity of the subject.

Expressive behavior is also a puzzling category. Its familiar forms—art, entertainment, and sports—are almost too multifarious for continuous monitoring; but insofar as they are manifested in leisure they become one more general type to be described as well as data and definition allow. Yet the connection between leisure and expressive behavior is not quite that simple. Practically *all* patterned behavior shows an expressive component. Voting in a presidential election, putting on a gray flannel suit for work, setting the dinner table with the “good” silver are all expressive acts to some degree. On the other side, much leisure has an instrumental element, the craft and do-it-yourself hobbies being the most obvious examples. Moreover, in everyday language expressive behavior implies participation in “culture,” which is regarded as an important value. It is considered even better if the culture is “high” rather than “low,” and if the person is active rather than passive. Thus, while some part of expressive behavior eludes the net of leisure, that part which is caught will be treated here as but one kind of leisure.

A discussion of the formidable definitional problems involved in these areas comprises the first part of this chapter. The second part will examine the problems of measuring leisure, dealing especially with sources of data and the difficulties of integrating different types of material and matching them to the definitions. The third section discusses the distribution of leisure across the social landscape; the fourth sec-

tion considers the organization and structure of leisure. The final part explores the difficult problem of the quality of leisure; for it is, after all, an evaluation of the quality of life that lies behind most inquiries into leisure.

PROBLEMS OF DEFINITION

The three central problems in defining leisure are first, to find sensible boundaries between leisure and other great categories of life; second, to develop flexible and sensitive ways of deciding if something is or is not leisure; and third, to reconcile the differences among the several aspects of leisure. That is, leisure involves *activities*, carried out through *time*, involving direct or indirect expenditures of *money* on the part of some numbers of *people*. Thus, any social accounting of leisure has to involve one or more of these four things—time, dollars, activities, and numbers of people. Various students of leisure, concentrating on one or the other of these aspects, develop different operative conceptions of leisure as a result of the particular data they use. The conventions of collecting and organizing time, dollar, or activity data are different; some components of leisure are thereby ignored or distorted. These have to be reconciled or at least confronted.¹ Yet no matter how fully they are described these aspects do not constitute a definition of leisure. What then is leisure?

Leisure is socially patterned behavior, guided by the peculiar norm that it be subjectively “free.” A typical expression of this fundamental prescription for leisure was reported in one of the Depression studies sponsored by the National Recovery Administration. It was said that “Leisure time by definition is free time. Any sense of obligation to do anything other than what one’s tastes and interests invite is a denial of the very essence of leisure.”² This popular view recounts the normative prescription of leisure, but it leaves us with two difficult questions—one is the perennial difficulty of translating subjective states into objective measures; the other is specifying what things are chosen by whom to occupy this “free” time. Lundberg, Komarovsky, and McInerney’s *Leisure*, a classic study, formulated and resolved the issues in this type of definitional statement.

Leisure is popularly defined as the time we are free from the more obvious and formal duties which a paid job or other obligatory occupations impose upon us. It is in this sense that we have used the term. Tentatively and for practical purposes, we shall accept this definition because it is relatively objective. In so doing, we shall not overlook the

important subjective differences which distinguish mere idleness, rest, or loafing, from relaxation, recreation, or a certain mental release or exaltation. In this more limited sense, leisure is primarily an attitude, a state of mind, a process of pleasureable adjustment to one's situation. Leisure in this subjective sense will always depend upon personality, temperament, education, and the activities that have preceded. An activity which is recreation to one person is onerous labor to another. The same activity may be either labor or relaxation to the same person at different times. But by the same reasoning it would be impossible to define work objectively on the basis of overt activity for it is frequently largely interwoven with recreational elements. Yet for many purposes we find such classifications of activity useful.³

Implicit in this optimistic expectation that leisure can be so readily objectively determined is the assumption that individual differences in the definition of leisure are really slight, that there is a dominant consensus on what is and what isn't leisure. To some extent this is obviously the case. For most people the ten-minute coffee break is so sharply *bounded off from the constraints of work* that its meaning is unmistakable.

The shape of the ground makes the figure. Even what is done during the coffee break is greatly influenced by the physical and social surroundings; the use of the free time is strongly determined by the surrounding situation. At the other extreme, retirement is as equally well bounded off from the constraints of work. Its meaning with respect to work is also unmistakable. Yet what is done in the "golden years" is much more problematical and undefined.

But what about the *daily* leisure hours, the *weekend*, and the *vacation*? These sectors of leisure are even more open and normatively varied. In addition to the different kinds of *measuring perspectives* for leisure (i.e., time, dollars, activity), there are also different "envelopes" of leisure, that is, constraining boundary points at each end of the leisure experience.

Structural Setting

What makes the whole picture complex is the structural setting of leisure as a mode of experience.⁴ It is institutionally interstitial, a patterned gap in the social anatomy. To oversimplify somewhat, work is institutionalized into corporations, businesses, professional-client and buyer-seller relations; the family fairly well encompasses sexual relations, procreation, and the early socialization of the young. Authority and its administration are organized into political parties and the agencies of government; religious needs and sentiment, especially those

related to the ceremonies of birth, marriage, and death, are located within the church. Of course, there is "leakage" of these functions into other institutions and a multiplicity of functions for each institutional grouping; nevertheless, there is a dominant locus for these needs and activities. Leisure, on the other hand, is not contained in any single institutional area but can be expressed in any of them. It can fit into any of them; to a limited extent it can also create its own institutions.

A second structural feature of leisure arises from the content of its "master norm," i.e., leisure as free time. Thus, it can fulfill a variety of functions for the individual. At various times a person can find in his leisure either tension release, creative expression, self-improvement, social integration, symbolic status defense or enhancement, and other gratifications, some of which are less consciously apprehended than others. Other modes of experience, such as work, family relations, and religion are also multifunctional, but leisure differs from them in an interesting and strategic way. There is no hierarchical valuation among the possible uses of one's free time that has community (or national) consensus, since there is no agreed-upon or clear-cut conception of their relative importance to the individual or to society as a whole.

The functions of work, on the other hand, are stamped with a fairly clear order of precedence, the maximization of economic return being the leading and almost unchallenged value. Religion and family life also are fairly unambiguous in their ranking of important values. But the multiplicity of possible leisure goals and especially their lack of consensual ordering gives a kind of unpriced cafeteria-selection quality to leisure and thus strengthens its shifting and problematical character.

A third feature of leisure is that the operation of its norm of being "free" invites specific normative control from other sources, notably from the specific social contexts in which a given leisure activity is placed or from the general values which permeate the culture as a whole. Before we examine these norms in more detail, it is important to identify the consequences of these structural defining properties of leisure.

From the institutional side, since leisure is contained within no single institutional context, it is competed for by all. This competition is not only for leisure dollars and hours but even more importantly for the public's value commitment. Churches and symphony orchestras, voluntary organizations and the television industry all want financial support or participation or attendance, to be sure; but even more they want their public to accept them fully and to become regular devotees.

Each institutional structure seeks to convert the casual dabbler, the occasional participant, into a full-fledged member. These vested leisure interests, as we might call them, have learned that the indeterminacy of leisure is bad for their business. The casual moviegoer or churchgoer, the occasional bowler or book reader is a greater risk than the avid fan, since he can be more easily wooed away by the ubiquitous competition. In these attempts to enclose leisure, organization has proved to be a major weapon. It is easier to sell one man twelve books than it is to sell twelve men one book, as the publishing industry has discovered. Thus industry, religious institutions, civic groups, art galleries, and symphony orchestras, not to mention commercial leisure interests ranging from bowling alley operators to the Mickey Mouse club popular in the 1950's, have elaborated endless ingenious organizational devices to contain the volatile leisure habits of the American public.

Were these tendencies unchecked, all leisure would eventually be encapsulated into vast sealed compartments with little crossing over from one context to another. The counterpressures which scatter leisure among a variety of activities stem in part from a person's roots in different institutions (he might want to spend all his free time with the boys in the company's bowling team, but the demands of his wife force participation in other leisure contexts—the family and the community). Moreover, the sheer force of satiation and desire for variety, when coupled with the fact that some leisure interests are almost incapable of being contained within the same organizational structure, also place limits on the organizational drift. The measurement of the extent of organization or dispersion of various leisure activities is thus an important part in the assessment of American leisure. The problems of measurement will be discussed later.

Normative Setting

We return now to the question of what leisure is subjectively, as defined by the norms that the culture offers beyond the imperative that it should be free. While it is necessary at some point to be quite concrete and say that leisure is skiing and going to movies and loafing, it is even more vital to give a normative definition of what the leisure experience is. Not only will the activities change over time, but their cultural meaning will also change; and if the range of normatively dictated meanings are not identified, then the endlessly changing catalogue of activities will be uninterpretable in broader terms. Yet it also is difficult to specify the full range of norms that define leisure for the same reasons that applied to its structural position. All institutions

want to extend their influence and control. From the world of work, still perhaps our major institutional anchoring point, there are two sets of powerful norms which seek to define leisure.

One set is to be inferred from the negative or residual definition of leisure given Arthur Stinchcombe in a recent sociology textbook.

There is a fundamental difference between activities that are systematically planned to achieve some purpose and those that are spontaneous. Generally we call systematically planned, purposeful activities "work," and spontaneous activities "leisure" or "play." Some people have more fun studying than dancing; professors are recruited from this group. But we still call studying "work," and dancing "play" because unlike studying, dancing is not systematically planned to achieve some purpose. As de Man, a Belgian pioneer of survey research on workers, asserted:

... all work is felt to be coercive. Even the worker who is free in the social sense, the peasant or the handicraftsman, feels this compulsion, were it not only because while he is at work, his activities are dominated and determined by the aim of his work, by the idea of a willed or necessary creation. . . . Work inevitably signifies subordination of the worker to remoter aims, felt to be necessary, and therefore involving a renunciation of the freedoms and enjoyment of the present for the sake of a future advantage.

Sociologists often call work "instrumental activity" and play "expressive activity."⁵

Three normative definitions of leisure are involved here. The first is the now familiar contraposition of coercive work to leisure as everything else spontaneous or "free." Clearly, this distinction obscures the coercive elements in the family, religion, the civil community, and the other major institutions we all participate in. While we may not have really come all the way down the secular road to anomie, there is no question that the pervasive polarization of work vs. leisure is a powerful indicator of the erosion of community, church, and family power. Direction by these previously central anchorings has clearly shifted from consensually supported imperatives to personally chosen options. Their inclusion in the category of leisure is only recognition of this fact.

The second norm is that leisure should be "fun," that leisure hours and activities are those in which the search for personal pleasure is pre-eminent. The third norm, apparently added as an afterthought, is that leisure should be expressive rather than instrumental. Since Stinchcombe is so abrupt here, it is not possible to tell how much he intends the polarity of expressive-instrumental simply to coincide with that of consumption-production or to reach beyond in the directions discussed

earlier. Whichever is meant, American culture as a whole stresses both meanings as important in leisure. We have, then, leisure implicitly defined by the norms directing people toward freedom (spontaneity), pleasure, and expressiveness. Work at the other extreme is coercive, serious, and instrumental. This distinction is in normative terms. The irrepressible currents of horseplay, gossip, and sociability at work, on the one hand, and the diligence and effortfulness of some leisure, on the other hand, modulate the polarity of the two extremes.

The ethos of work, paradoxically, attempts to invade and stamp leisure with its own values of achievement and purposeful activity and give leisure a contradictory set of norms. The following injunction from a book entitled *The Leisure Wasters* is typical of the evangelical tone of such preachments:

There is a ready-made purpose allied with one's vocational life. It is to get the job done, to receive an income, to spend a certain number of hours in a place of business. Leisure has no such built-in purposes. Then it is up to the individual to give it a purpose, or to spend it without purpose. . . . It's time to unpack purpose and get it into operation again. Leisure time should be filled with a sense of purpose if we are to have any sense of *living* at all.⁶

The tension between the values of work and those of leisure pointed up in this quotation lead to a discussion of the quality of leisure; but we postpone this for later consideration.

Guidelines

Having located leisure in an unsettled structural and normative situation, we return to the two major initial questions: How is leisure to be distinguished from the other major categories of living and how is any given item to be assigned? As to the first question, the tripartite division of work, nurturance-maintenance, and leisure is the broadest categorization that has a viable tradition of usage in the social sciences. It is an approach that maximizes inquiry into the central question of how the restless, shifting quality of leisure is differentially channeled into various institutional contexts and differentially defined by the values of those contexts. By implication this view acknowledges the still dominant coercive power of work and the *relatively* weak coercion that comes from family, religious, civic, and political settings.

The second question is not so easily answered. Just as hard cases make bad law, difficult research decisions can make weak generalizations. The decisions as to what is leisure, what is work, and what is

maintenance-nurturance are indeed difficult for those gray areas at the boundaries.

Three guidelines which can help make these decisions more consistent constitute what can be called a *modular strategy*. First, the life cycle of the individual or the family should be taken into account. Thus, for example, schooling has the coercive power for the young that work has for adults; educational activities should therefore be treated differently for different age groups.

Second, the natural distinctions of leisure "envelopes" should be maintained where feasible. The weekday, the weekend, the vacation, and retirement are each constrained by different forces and activities and have different meanings.

Third, the time, activities, or dollars devoted to leisure should be recorded and reported in as microscopic a form as is practical; first, so that the mosaic of leisure can be mapped in its complexity, and second and more important, so that the components can be put together for different purposes. Social policy planning for leisure is likely to be aimed at specific types of leisure for particular groups of people. The factual basis of that planning, therefore, should have the flexibility necessary to isolate the relevant data without contamination.

While these three guides help delimit the field there remains the alternate question of how to classify an activity. Ten minutes of setting-up exercises in the morning is clearly to be counted in the maintenance-nurturance entry of a time budget. Participation in a health club, whose activities involve considerable opportunity for expressive behavior, is a mixed case, though the maintenance-nurturance elements appear to outweigh the leisure aspects. But what of nudist camps? While they make appeals to health concerns they appear predominantly to serve a social and ideological expressive function within the context of leisure. Or, to focus on a different issue, where do sex and courting belong?

The answer has to come from either an intuited or an empirically determined *consensus*. For the latter, periodic surveys on leisure are clearly necessary to clarify and refine the intuitions that will have to suffice until there is a stronger empirical basis for decision.

PROBLEMS OF MEASUREMENT

The heart of the issue is to assign numbers to the time, the dollars, and the activities that are designated leisure in such a way that they are relevant to the definition we have developed and are coherent with each other. This does not mean that the statistical indicators have to

match perfectly; one of the major purposes of this section in fact is to discuss the failure of various leisure indicators to do just that. First, however, two other problems: one has to do with the criteria that these numbers should satisfy before they can be considered useful indicators of the nation's leisure and the other has to do with the different kinds of units by which leisure can be measured. The various criteria governing social indicators have been discussed extensively;⁷ those which raise special problems for leisure are reviewed here briefly.

Criteria for Leisure Indicators

The first criterion is that if national policy is to be guided, or at least tracked by, factual accounting of national life then a truly national set of indicators is necessary. Insofar as statistical series are gathered or controlled by leisure industries, especially by trade associations or specialized publishers connected to some leisure activity, their coverage is likely to be uneven and incomplete to an unknown degree. *Historical Statistics of the United States*, for example, contains a table showing the numbers of bowling teams from 1896 through 1957. The source of the data is *Bowling Magazine*, a publication of the American Bowling Congress (ABC). Beneath the surface authority of this appealing set of data, however, lies the turbulent history of American bowling. The ABC, organized in 1895, extended its reach over existent bowling slowly and sporadically. In 1906–1907 Eastern bowlers seceded and formed their own organizations, yet there is no indication in the table whether the departing teams were or were not included. In 1920–1921 a large number of teams from New York City were reunited with the parent organization; again there is no way of knowing whether these teams were counted for the first time. Moreover, in 1915–1916 membership in the ABC was limited to “male white sex.”⁸ How many teams of women and nonwhites were there then; and when the clause was removed, did the number of teams jump to include them?

These particular figures obviously should be regarded with considerable skepticism, and there is every reason to suspect that most other leisure associations have had a similar history of partial coverage as they evolve from scattered beginnings into more complete saturation over their fields. The resulting bias is likely to show more rapid initial growth than actually exists.

A second criterion is standardization. The natural and almost incapable tendency of each state and large city, each leisure industry and each research enterprise is to define its categories and measuring in-

struments according to its own needs and traditions. This is difficult to overcome, requiring something like the steady, disinterested, and virtuoso skills that have been used by the American Standard Association in achieving standardization in vast areas of American industry. Similar skills, in addition to federal support, would have to be applied, but applied flexibly to avoid the inherent difficulty in standardization, that is, a frozen rigidity wherein the categories of a statistical series can over time let reality slip beneath the measures. Consumer expenditures for "sports equipment," for example, have been recorded in U.S. government series from 1909 to the present.⁹ As valuable as it is to have something that captures this important type of leisure expenditure, the meaning of this category is far from clear given the changes in the types and technology of sports over the past sixty years.

Thus a third and somewhat contradictory criterion is specificity of categories. Whether the measures are time, dollars, or activities, they should be kept to the smallest, most homogeneous scale possible within the bounds of reasonable length of the entire list. For instance, the category of "radio and television receivers, phonographs, parts and records" (though detachable from musical instruments to which it is generally joined) in the series of consumer expenditures cited above is still less than useless if we wanted to analyze the interrelations and the functional equivalence among these three different kinds of leisure expenditure as they changed, grew, and declined from 1909 forward.

Finally, there is the criterion of meaningfulness. An indicator has to tell us something unambiguously about some aspect of leisure. It is too much to ask that the subjective meaning and quality of life expressed in the leisure indicator be immediately interpretable. However, there should be some precision as to what unit, which people, and how many of them are doing what under known social conditions.

A few examples illustrate the point. Marion Clawson, in discussing outdoor recreation, states:

Data on visits are frequently described as though they relate to visitors, thus leading the uninitiated into erroneous conclusions. There were 55 million visits to the national park system in 1956, for instance; this figure surely represents far fewer than 55 million people, but we do not know if it represents 30 million persons or 20 million, or some smaller or larger number.¹⁰

Here is a more serious failure to relate numbers meaningfully to definitions:

A survey of 21 museums alone showed an aggregate attendance of 19,370,000 in 1958. Within two years this had climbed to 21,360,000—

a gain of more than ten per cent. Across the country museums are making room for unaccustomed crowds.¹¹

The implication here, relentlessly pursued by the author, is that we are in the midst of a "culture explosion." We are not told though, which 21 cities these were, whether their population growth was more or less than 10 per cent, whether these figures represent people coming in by themselves or as part of organized groups, or how many *people* not *visits* these figures represent, or whether they represent adults or children.

Finally the apparently phenomenal growth from 1929 to 1963 of total expenditures for "Admissions to Legitimate Theater and Opera and Entertainments of Nonprofit Institutions (Except Athletics)," to use the 1954 Survey of Current Business classification, is radically brought back to a meaningful level through the corrections of inflation, population growth, and allocation of disposable income in Figure 1.

Equally important for meaningful indicators is having statistical series as wide-ranging in their content as the extended definition we have proposed for leisure. Adult education and the myriad forms of community participation, for example, are two obvious items that are all too often omitted in either time or dollar statistical series on leisure. A related problem is the present inability to disentangle the leisure from the work components in such activities as travel, eating, and reading. Considerable experimentation in data collection techniques is necessary in order to clarify these ambiguities.

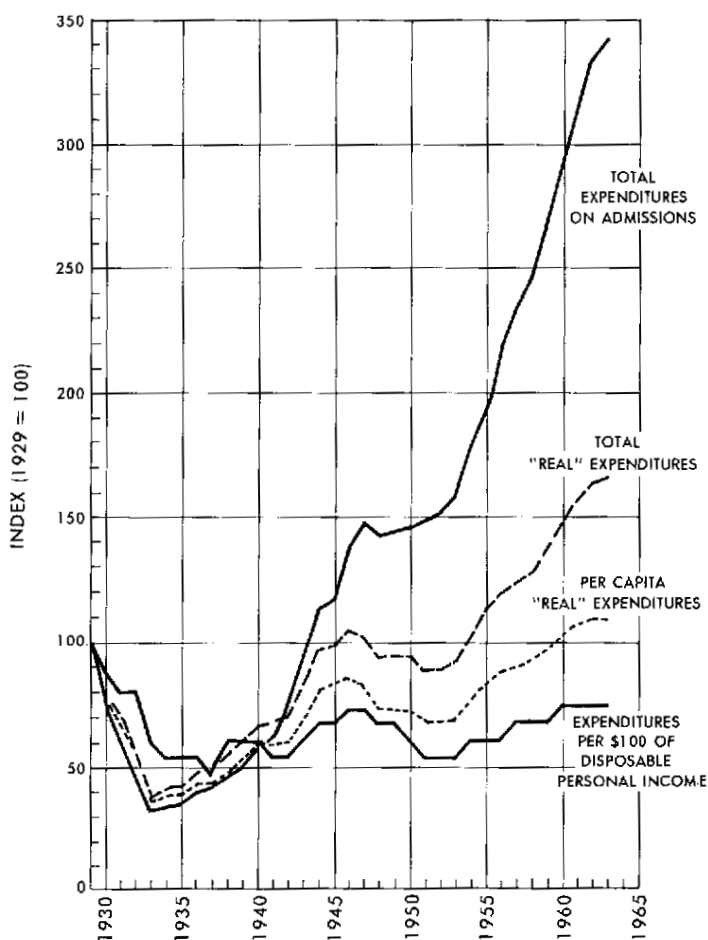
In short, the sources and nature of statistical series on leisure have to be carefully filtered through at least these four screens before they can be considered as useful for establishing national yardsticks on leisure.

Units of Leisure Output

Now let us consider the units by which leisure can be measured. On the output side there are two different ways of quantifying the element of time, two different ways of assessing the leisure dollars expended, and several ways of counting the variety of leisure activities along with the number of people engaged in them.

Time Measures. Of the two types of temporal accounting of leisure, one is the attempt to specify the *total amount of leisure available* to the country, to answer the question: How much leisure time do we have and how is it changing? Just as a major definition of leisure was a negative one, that is, the "leftovers" from work, this approach has the

FIGURE 1. INDEXES OF EXPENDITURES ON ADMISSIONS, 1929-1963



To permit comparisons among statistics as heterogeneous as total expenditures and per capita expenditures, the data are all expressed in terms of the corresponding 1929 figure, which is taken as 100. For example, the total expenditure on admissions in 1939, \$64 million, is approximately 50 per cent of the 1929 figure, so that the 1939 index number is 50, and that is the admissions figure plotted for 1939 in the graph. All of the lines start off from exactly the same level (100) because the 1929 figure is, by definition, always equal to 100 per cent of itself.

SOURCE: Baumol, William J., and William G. Bowen, *Performing Arts: The Economic Dilemma*, Twentieth Century Fund, New York, 1966, p. 46.

same strategy of answering the questions by counting the residual hours, often removing those which are not leisure. A particularly sophisticated example of this kind of aggregate analysis was used by Clawson and Knetsch. They show in Table 1, for the years 1900, 1950, and 2000, the total number of hours available to the total U.S. population. The basic trichotomy of work (and its equivalents for students and housewives—school and housekeeping), maintenance-nurturance, and leisure is clearly visible. From the turn of the century our total leisure hours have increased by 25 per cent from 1900 to 1950.¹²

As one would expect, the separate entries for weekday, weekend, vacation, and "retired" leisure show different rates of change, with the weekend showing the largest rate of increase. Yet how are their data to be interpreted? The authors themselves indicate two difficulties, one of which is really not a problem. They worry that their data cannot show how different classes of people have different amounts and types of leisure, but aggregate data simply are not designed to tell what groups have more or less leisure of different kinds. The other difficulty is more serious. The authors indicate considerable disagreement as to whether their estimates are correct, some critics claiming there is more leisure available, others less.

Sebastian De Grazia's work¹³ is cited, for example, as suggesting that there is considerably less leisure now than Clawson and Knetsch claim. Since the two sets of data are both in aggregate form and gathered for roughly comparable time periods, a direct comparison seems possible. But the two sets of data simply don't match. The Clawson aggregate data are based on a yearly basis for the entire population. The De Grazia data are a complex and fastidious reconstruction of the *changes in the weekly hours of leisure* from one time period (1850) to another (1950). This factor alone makes comparisons difficult, since the Clawson data deal with *annual totals*. Direct translation is impossible for other reasons. The De Grazia material treat vacations, which are almost always taken in a lump sum of time, in terms of fraction of hours per week; it considers only the adult male full-time worker; and it does not give an estimation of the total maintenance time during the week. It is a genuine puzzle why the two sets of data do not match. It could not be the surprisingly large percentage of time for sleep (about 40 per cent) in the Clawson data compared to the more expected 33 per cent for sleep in De Grazia's calculations, because this goes the wrong way. That is, the Clawson data would show even more leisure, for if hours devoted to sleep were counted, the problem then would be a matter of calculation and definition. De Grazia does not automatically

TABLE 1. NATIONAL TIME BUDGET AND TIME DIVISION OF LEISURE, 1900, 1950, AND 2000

Use of time	1900			1950			2000		
	Billion hours	Per cent of total time	Per cent of leisure time	Billion hours	Per cent of total time	Per cent of leisure time	Billion hours	Per cent of total time	Per cent of leisure time
1. Total time for entire population	667	100		1,329	100		2,907	100	
2. Sleep	265	40		514	39		1,131	39	
3. Work	86	13		132	10		206	7	
4. School	11	2		32	2		90	3	
5. Housekeeping	61	9		68	5		93	3	
6. Preschool population, non-sleeping hours	30	4		56	4		110	4	
7. Personal care	37	6		74	6		164	6	
8. Total (items 2-7)	490	73		876	66		1,794	62	
9. Remaining hours, largely leisure	177	27	100	453	34	100	1,113	38	100
10. Daily leisure hours	72		41	189		42	375		34
11. Weekend leisure hours	50		28	179		39	483		44
12. Vacation	17		10	35		8	182		16
13. Retired	6		3	24		5	56		5
14. Other, including unaccounted	32		18	26		6	16		1

SOURCE: Clawson, Marion, and J. L. Knetsch, *Economics of Outdoor Recreation*, The Johns Hopkins Press, Baltimore, 1966, p. 22; adapted from Holman, Mary A., "A National Time-Budget for the Year 2000," *Sociology and Social Research*, vol. 46, no. 1, October, 1961.

count the reduction of work time as a gain in leisure. De Grazia recognized, in short, the coercive power of other institutions to drain away the "free time" won by less work. The conclusion, however, is that not until there is agreement as to these definitional issues will there be the possibility of gaining an estimate of our aggregate leisure time.

The second way leisure time can be measured is through *time budgets of individuals*. This relatively expensive data collection method can yield intensive and specific information as to how much leisure time a person has, how he uses it, how it fits into the rest of his life, and most important, how different kinds of people have different leisure patterns. For reasons that are not at all clear this style of data collection has not flourished in the United States. As Nelson Foote recounts its history, only two major sociological monographs and three large-scale social-bookkeeping studies (the last being in 1950), have kept this research tradition alive.¹⁴

In Europe, however, time budget analysis has been more securely rooted, and appears at present to be thriving by virtue of UNESCO sponsorship of a multinational project directed by Alexander Szalai.¹⁵ Such a coordinated approach, recently discussed by Robinson,¹⁶ is essential if time budgets are to become a reliable social yardstick, because this microsocial technique has to standardize a very large number of procedures and agree upon so many important points of variation.

The methodological issues discussed by Foote point to fundamental questions of how people define and name the moments and activities of their everyday lives and how they give temporal and social boundaries to them. If the *social scientist* specifies the categories of leisure and work in advance, he sacrifices the immediacy and reality of the experience in favor of reliability of observation over large samples. If, on the other hand, the *respondent* records in his own terms the flow of activity (or nonactivity) over time, then the costs of such "validity" are sampling bias (how many people can keep diaries), and noncommensurability of categories. The time budget technique, in sum, is so much at the mercy of definitional predilections as to the meaning of activities and their measurement that it is probably best suited at this point as a basic research tool rather than as an instrument for the social monitoring of leisure behavior.

A widely used modification of the time budget is the use of diaries or surveys focused to measure the use of time for specific purposes. Travel to and from work, visits to public recreational areas, and television viewing are common examples. Widespread agreement as to the defi-

nition of these activities, their relatively sharp delimitation from the totality of everyday life plus their immediate social utility are factors that account for the extensive use of such survey and diary studies. Yet the very concentration on a single activity without the context of the rest of the day can distort its extent and meaning.¹⁷

What can we conclude about the systematic measurement of the "time envelope" for leisure? As social indicators neither the macrosocial aggregate measure of available leisure time nor the microsocial time budgets have enough definitional consensus or methodological clarity at this time to qualify them as immediately serviceable indicators. They both have most promise when they retreat from the extremes of either attempting to measure the total leisure hours in the country or the minute-by-minute recounting of what a given day is like toward a middle level of familiar activity categories and temporal units. When they do this there are impressive regularities and findings that are plausible and inviting for further research.

Money Measures. We turn now to the economic side of leisure. As with the temporal dimension, there are two comparable kinds of measures. One is an aggregate of all consumer expenditures for leisure and the other is the dollar budget study of persons or households. The latter are expensive and require considerable efforts to mount; thus they have been done on a national scale only infrequently.¹⁸

The longest and most stable statistical series of aggregate leisure expenditure data comes from the Survey of Current Business.¹⁹ It has used approximately the same data collection methods and categories since 1929. In *America's Needs and Resources, A New Survey*, Dewhurst extended the series back to 1909 with the aid of a variety of sources. Thus we have a continuous accounting of leisure expenditures for the entire United States for about sixty years, but it should be emphasized that this accounting reflects the viewpoint and definitional practices of the *producers* of leisure, not those of the *consumer*. The dollar amounts expended for leisure, however, are positive quantities, not residuals as was the case with the aggregate estimates of leisure time.

The first question which arises, then, is how well the categories organizing these quantities fit into the rubric of the threefold division of work, maintenance-nurturance, and leisure. Superficially they appear to fit quite well. Of the twelve major expenditure categories in the 1966 version of the Survey of Current Business Consumer Expenditure reports, five are readily identified with maintenance-nurturance, one with work, three fall into our definition of leisure, and three are mixed.

The maintenance-nurturance categories are clothing, personal care, housing, housing operation, and medical expenses. The categories which can be included in the definition of leisure are recreation, education, and welfare. The one category clearly related to work includes a variety of items ranging from working equipment, union dues, and so forth.²⁰ The mixed ones—food, domestic and foreign transportation—comprise, unfortunately, about 45 per cent of the total in recent years. The largest component of the mixed group is food purchases. From one point of view, this item is clearly maintenance-nurturance; from another, that of time, *eating* has a strong leisure component. In fact, eating is included in the aggregate leisure time assessments, since everything that is not work is included in leisure. There is no easy way to resolve this paradox. Even if the dollar and the time conceptions of food consumption could be harmonized, there remains the difficulty of segregating the portion that should be allocated to work, to maintenance, and to leisure. The contrast of home expenditures for food vs. restaurant expenditures is only a partial solution, since the functions of both are mixed.

The same problems apply to transportation. Some travel dollars (and time) should clearly be included in leisure; some involve the journey to work and should therefore be considered as maintenance. Yet the organization of the data precludes the differentiation. Moreover, the expenditures for hotel and motels, an obvious part of the cost of travel, are buried with expenditures for costs of "clubs, schools and institutions" in "Other Housing" which is in the Housing category, ordinarily considered as maintenance-nurturance. The situation in these mixed-expenditure categories, is, to say the least, unsatisfactory. No clear and reliable distinctions as to their leisure share can be made; and therefore, until clear and refined definitions are agreed upon, we are blocked in making aggregate estimates.

A close examination of the subcategories under recreation reveals the same unhappy result, one that has worsened over the years. The categories used in the Survey of Current Business prior to 1947, whatever their deficiencies, were radically compressed and reorganized in 1954. Probably the sheer growth in size and diversity of leisure enterprises strained the resources of the voluntary and trade associations upon whom the government relies and those governmental agencies themselves. Therefore, the commendable aims of completeness and modular disaggregation became too expensive to support. The response of the Survey in any case has been to reduce the specificity of the categories. Table 2 compares the organization of the earliest and the present recreational categories.

TABLE 2. RECREATION CATEGORIES FROM THE
NATIONAL INCOME SUPPLEMENT
 TO THE SURVEY OF CURRENT BUSINESS, 1947, 1954

1954	Recreation	1947
1. Books and maps	5a. Informal recreation Books and maps	
2. Magazines, newspapers, and sheet music	5b. Magazines, newspapers, and sheet music	
3. Nondurable toys and sports supplies	5d. Nondurable toys and sports supplies	
4. Wheel goods, durable toys, sports equipment, boats, and pleasure aircraft	5e. Wheel goods, durable toys, and sports equipment	
	5f. Boats and pleasure aircraft	
5. Radios and television receivers, records and musical instruments	5h. Radios, phonographs, parts and records	
	5i. Pianos and other musical instruments	
6. Radio and television repairs	5j. Radio repairs	
7. Flowers, seeds, and potted plants	6. Flowers, seeds and potted plants	
8. Admissions to specified spectator amusements	1. Admissions to specified spectator amusements	
8a. Motion picture theatres	1a. Motion picture theatres	
8b. Legitimate theatre and opera and entertainments of non-profit institutions (except athletics)	1b. Legitimate theatres and opera	
8c. Spectator sports (footnote specifies this as including the 1947 categories and neither specifies nor implies others)	1c. Entertainments of nonprofit organizations (except athletics)	
	[Spectator Sports]	
	1d. Professional baseball	
	1e. Professional football	
	1f. Professional hockey	
	1g. Horse and dog race tracks	
	1h. College football	
	1i. Other amateur sports	
	1j. Ticket brokers, markup on admissions	
	1k. Purchase of programs	
9. Clubs and fraternal organizations, except insurance (footnote specifies this as including the 1947 categories and neither specifies nor implies others)	8. Clubs.	
	8a. Athletic and social dues and fees	
	8b. Social fraternities dues and fees	
	8c. Fraternal, patriotic, and women's organizations	
	8d. Luncheon clubs	

TABLE 2 (cont.)

1954	Recreation	1947
10. Commercial participant amusements (footnote specifies this as including the 1947 categories and neither specifies nor implies others)	4. Specified commercial participant amusements	4a. Billiard parlors and bowling alleys
		4b. Dancing, riding, shooting, skating, and swimming places
		4c. Amusement devices and parks
		4d. Daily fee golf courses, greens fees
		4e. Golf instructions; club rental, and caddy fees
		4f. Sightseeing buses and guides
		4g. Private flying operations
11. Pari-mutuel net receipts	2. Pari-mutuel net receipts	
12. Other (footnote specifies this as including the 1947 categories and neither specifies nor implies others)	Other	5k. Photo developing and printing
		5l. Photographic studios
		5m. Collectors' net acquisition of stamps and coins
		5n. Hunting dog purchase and training, and sport guide service
		5o. Veterinary service and purchase of pets
		7. Camping fees
		3. Nonvending coin machines receipts minus payoff
		9. Commercial amusements
[Not visible in 1954]		5c. Book rental and repair
		5g. Boat and bicycle rental, storage and repairs

SOURCE: I am grateful to Don Parker of Wesleyan University for this reconstruction.

Two general observations about the reorganization of these categories: First, in spite of extensive reshuffling, the categories are basically identical. Whether this is a deliberate policy to maintain historical continuity or simply administrative somnolence or concerted resistance by the nation's retail establishment to extensive record-keeping (which appears the most likely possibility), the result is a failure to capture the changing leisure scene. None of the new types of leisure expendi-

ture is included. Second, the glacial packing of specific activities into larger categories—commercial participant amusements, clubs, and “other” in particular—precludes microscopic analyses of leisure trends. We are, in addition, frozen into an acceptance of these larger predetermined groupings without the opportunity of rearranging the specific items into different configurations and combinations.

A closer look at the resulting groupings reveals that hardly any is satisfactory. “Books and maps,” for example. Perhaps it is unnecessary to carp at a mixture of books with maps if the latter constitutes as small a proportion of the whole as common sense would suggest. But how small is it; and how many of the dollars spent on maps are spent by *individuals* in the pursuit of leisure rather than museums, libraries, etc.? Previous data show that 22 per cent of all books sold in 1960 were educational (purchased largely by schools) and 20 per cent were juvenile books.²¹ The ordinary meaning of “book buying” is certainly inflated by these figures. At the other extreme is the almost certain understatement of commercial participant leisure. Any random scanning of the weekend newspapers from Byron, Illinois, home of one of the country’s busiest drag strips, to New York City will reveal more varieties of participant entertainment than appears in the Survey’s list. A similar understatement is to be found in the admissions to spectator amusements.

A different kind of difficulty results from the splitting of expenditures for *equipment* (only partially contained in the “Wheel goods, durable toys, sports equipment, boats and pleasure aircraft” category), from the *fees and attendant expenses* involved in the use of that equipment. Thus it is impossible from these figures to secure an accurate picture of the relative position of such rapidly expanding activities as camping, boating, skiing, or golfing. Then the survey combines some items that make little sense together and separates others that should be combined. Why, for example, should sheet music be included with magazines and newspapers? Shouldn’t reading be regarded differently from music-making; and if music-making is a useful category, why should the expenses for musical instruments be included in the expenditures for radio and television receivers and records? (The advantages of separating these last three items from each other was noted above.)

Another puzzle: while gardening is a widespread activity, why should it be traced only by the money spent on flowers, seeds, and potted plants? Such a combination, in fact, mixes the florists’ products with the home-grown variety. More important is the absence of a

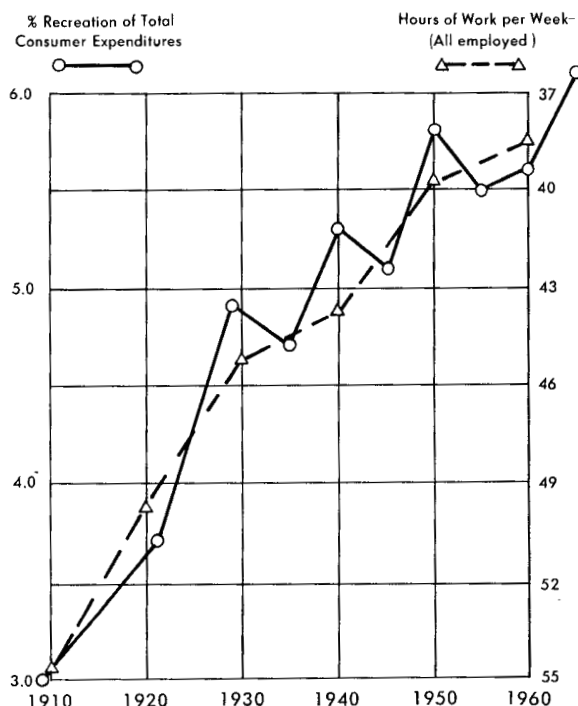
separate accounting for the very large expenditures for garden and lawn equipment, which, judging from the periodicals on the subject, loom large, and another for perhaps from 10 to 20 per cent of the leisure gardeners who hire people to work in or to design their gardens.²² The equipment expenses are buried in the sports equipment category and the hired personnel expenses do not appear to be caught anywhere. Why should gardening be singled out, in short, if only to be badly reported? Again, why should pari-mutuel receipts be separated from the item of nonvending machine receipts, if the latter are, as appears, largely from gambling devices? The two items should be kept together even though it is obvious that the amounts spent on gambling are far greater. No one has as yet documented the estimates ranging from 3 to 20 illegal dollars bet for every legally reported gambling dollar—another instance of underreporting leisure expenditure.

Finally, there is the problem of "Other." The general difficulties with the revision of the series is underscored by the way that eight specific activities previously reported in various parts of the schedule were clumped and homogenized into the residual "Other" category. This is an unfortunate loss, since in 1965 "Other" constituted about 7.5 per cent of all leisure spending and ranked sixth among the twelve types of leisure activity. In 1929 these items amounted to only 5 per cent and together ranked eighth indicating an expanding role for this kind of leisure, which though heterogenous points to an active, high-skill type of activity.

These criticisms may appear quarrelsome and unresponsive to the exigencies imposed on the compilers of the series. While internal reformulation of the categories along the lines suggested above is still an imperative—at least a cessation of aggregation is called for—perhaps we have been imposing an unsuitable purpose on the series. It may be that the aggregate expenditures approach is best suited for gross comparisons of leisure with other kinds of consumer spending rather than as a tool of internal comparison among different types of leisure activity. In any case the obvious question as to how much money is spent for leisure as a whole and how that amount varies with restricted or broadened definitions of leisure we postpone for a comparison with family budget data.

An analogous question is how the aggregate measures of leisure dollars compares to the aggregate measures of leisure time. This is really only meaningful as a time series confrontation, seeing, that is, the changes in the relative share of the consumer budget allotted to

FIGURE 2. PERCENTAGE OF CONSUMER EXPENDITURES
FOR RECREATION AND LENGTH OF AVERAGE
WORK WEEK, 1909-1965



SOURCE: Derived from De Grazia, Sebastian, *Of Time, Work and Leisure*, Twentieth Century Fund, New York, 1962, Table 1; and Dewhurst, J. Frederic, *et al.*, *America's Needs and Resources; A New Survey*, Twentieth Century Fund, New York, 1955, Table 4.4.

leisure matched to the change in the available leisure time. The latter is measurable most clearly by using the hours of work as the indicator and assuming that the hours of maintenance-nurturance have either not changed radically from the turn of the century until the present or that some of that maintenance is now at the borderline with leisure, as well might be the case with gardening and home upkeep. Thus Figure 2 shows the percentage of consumer dollars going into "recreation"—a minimum definition—along with the decline in the average length of the work week from 1909 to 1965.

The relationship is clear and regular; as the hours of work decline,

there is a parallel increase in the relative outlay for recreation. The interpretation of this pattern is far from clear, however, and it raises more questions than can be answered within the scope of this chapter. The first question is to determine how much of the time gained from work goes into leisure and how much into maintenance-nurturance. The second question is the differentially changing price levels of leisure activities and their relation to the general increase in income over the years. Third, has the cost of leisure, differential pricing aside, increased due to more complex and extensive equipment and technology and the use of more expensive human and natural resources? Fourth, how do the different types of recreation differentially contribute to the overall growth of leisure spending—which items have grown rapidly, which have declined? These are the kinds of questions the aggregate approach invites, and while there is considerable room for disagreement over the theoretical definition and its empirical indicators, there is nothing like a multiple regression to give some answers.

Fisk's monograph, *Leisure Spending-Behavior* is a particularly useful beginning in this respect, demonstrating quite nicely the influences of differential inflation and income elasticities on recreational spending. The conclusions in brief appear that in recent decades "the amount of money spent on recreation goes up when the relative price of recreation goes down" and that variations in leisure expenditures are closely tied to changes in income.²³

How does the aggregate dollar picture compare to the family budget method in its categories and its dollar estimates? With respect to the first, the important comparisons are in the *range and detail* of specific leisure expenditure categories. Of the previously cited major family budget studies in recent years the two Bureau of Labor Statistics Surveys of 1950 and 1960 elaborate a set of categories essentially similar in scope and detail to that of the Survey of Current Business' aggregate list. Yet the Life-Politz survey strongly suggests that far more detailed specific information can be gathered and separately tabulated than we might expect from the two BLS studies.²⁴ This may be accounted for by the larger scope of the latter enterprises, or their desire to conform to the categories of the Survey of Current Business, as well as the Life-Politz interest in serving specific commercial clients. But why couldn't the aggregate method be more detailed? The reasons, beyond those of cost, must lie in the nature of the leisure spending. Some kinds of activity may elude tracing through aggregate market indicators by being too diffuse—entertaining at home, gardening, or even vacations and outings, for example.

It is an open question whether one method of documenting the full range of leisure spending is better than another. A case can be made that either of the two is superior in identifying the obscure and infrequent kinds of leisure spending and that only experimentation and careful cost estimates can provide the answer. It is possible at present, though, to compare them on their absolute and relative dollar estimates of leisure spending. One such comparison was made by Lester D. Taylor who matched the 1960 BLS Survey of Consumer Expenditures with the National Income and Product Accounts (aggregate data) for that year.²⁵ He reports that when weighted to the total U.S. households the individual budget method is nearly \$20 billion lower than the aggregate one. The single largest discrepancy is a \$6 billion gap attributable to alcoholic beverages; that is, the percentage of alcohol to total consumer expenditures in the Survey of Consumer Expenditures (household budgets) is only 42 per cent of the comparable aggregate percentage. Taylor concludes that a "Puritan" effect is responsible. Whatever the social value that distorts the reporting of alcoholic beverage consumption, the quality of the statistical data is so good that there can be little doubt that the individual reporting is at fault. The important fact is that there are discrepancies in the two series, discrepancies in estimating how large or small a share a given type of leisure occupies in the total leisure budget. Table 3 shows the ratio of individual to aggregate proportions of total expenditures in each leisure category.

Total recreation, for example, was estimated by the aggregate method to be \$18,901,000 or 6.71 per cent of the aggregate total consumer expenditures. The individual estimate of leisure spending was \$16,082,000 or 6.15 per cent of total individual consumption. The ratio of the two percentages is 85.1 ($6.15/6.71$) indicating that the individual method *understates* the level of recreational spending compared to the aggregate approach. (A ratio of 100 indicates the two methods are identical in estimating an item.)

While the grouping of the items in the larger clusters appears almost idiosyncratic, it does have an attractive logic; e.g., participation activities are conjoined to equipment costs. Even if wrong, it illustrates the case for maximum flexibility through disaggregation.

The two methods are closest in estimating spectator admissions (99.9) and radio, television, records, phonographs, and musical instruments (90.2) and newspapers and magazines (84.4). Is this because these items are the most routinized both in production and in their place in family life and therefore most readily accountable? This

TABLE 3. REPORTED RATIO OF INDIVIDUAL TO AGGREGATE EXPENDITURES FOR VARIOUS LEISURE ACTIVITIES

<i>Activity</i>	<i>Ratio of individual to aggregate expenditures</i>
<i>Total recreation</i>	<i>85.1</i>
Books	60.4
Newspapers and magazines	84.4
Toys and play equipment, participant sports, other transportation, club dues and memberships	65.7
Television, radio, phonograph, etc. includes maintenance, musical instruments	90.2
Spectator admissions, recreation out of home city	99.9
Other recreation, hobbies, pets (purchase and care)	161.5

SOURCE: Taylor, Lester D., "Combining the 1960-61 BLS Survey of Consumer Expenditures and OBE Time Series Data in Projecting Personal Consumption Expenditures," unpublished manuscript, 1967, Table 1.

conclusion gains some support in that the aggregate method understates most radically the level of spending for hobbies, pets, and the ubiquitous "Other." This may mean, either alternatively or in addition, that these fragmentary and scattered activities are so fine-grained they slip beneath the screen of aggregate accounting.

Plausibility, that great enemy of social science, shows itself at this point in the significant aggregate *overestimation* (compared to the individual data) of participant sports, sport equipment, toys, etc. (65.7). Why wouldn't these diverse and multifarious activities yield the same result as did hobbies and the like? Again, only close and systematic scouting can provide the answers.

Leisure dollars can be monitored in another way, one that is more fragmentary and more displaced from *total leisure spending* of either families or the total economy. This way is the special study of some particular activity, e.g., boating, outdoor recreation, television, or book reading. While such surveys gain in depth they are generally unattached to the larger loom of the individual's or the society's total leisure patterns.

Activity Measures. Dollars and hours track leisure at a distance. To get a closer look we want to know how many people are doing what kinds of things. Here is a typical popular conception:

"It has been estimated that more than twice as many people now go to art museums as ball games."²⁶ This kind of statement quanti-

tatively relates leisure activities to some fairly clear though implicit social value—"high culture is better than a passive spectator sport." Leaving aside such a judgment, for the moment we turn instead to the question of how the diversity of activities and numbers of people engaging in them can be measured. One way is to study the *individual*, asking him about his interest and activities. Another is to trace the leisure *activities* themselves through their more or less organized forms. Studies focusing on the individual are devoted to one type of leisure activity²⁷ or they sweep across all of leisure asking their respondents what activities they engage in, how often, and sometimes how much money they spend on each. Generally such surveys often contain additional questions about the respondents' attitudes and experiences with respect to work, leisure, self, community, family, and so on. The analyses then typically describe the relative rates of various activities and the differences in the people who engage in them.²⁸

Essentially the same kind of information can be gathered by investigating the organized forms of a given leisure activity, for these "organizations" often conduct surveys of their actual and potential users. One difficulty with such surveys is the diversity of their methodology and their general lack of sophistication. The reasons are familiar—scanty financing, inadequate professional expertise, over-restricted objectives. Even so, these surveys form a fascinating if fragmentary mosaic portraying the spread and growth of leisure's multifarious activities.²⁹

For example, how much would we know about that common but mysterious expressive act, the purchase of flowers, without the aid of the survey reported by the U.S. Department of Agriculture?³⁰ This anonymous study (why can't we know its director and its methodological description?) tells us two interesting facts. One is that from 1930 to 1964 the sales of flowers by telegraphic wire increased from two to nine million orders, an increase quite accurately predicted by changes in disposable personal income, employment levels, confectionery sales, and the sales of household appliances. The other is the distribution of customers' uses of flower purchases; in 1964 46 per cent of florists' total sales were for funerals, 19 per cent were for hospitals, 9 per cent for weddings, 4 per cent for conventions and business openings, 5 per cent for church use, and only 10 per cent for home use (the remaining 7 per cent was for "other" uses).³¹

It is no surprise that the basic ceremonies of birth, marriage, and death are the important occasions of flower sales, but how much more we would know about the whole range of expressive behavior in these

situations and in everyday life if there were large-scale, broad-ranged studies instead of these slivers of information unanchored to any context. Such consolidated or at least centrally coordinated studies might bring about standardization of such basic categories as "member," or "user," not to speak of more agreement on softer terms such as "heavy" or "regular" users. These difficulties are seen quite visibly in the National Ski Census, a useful but flawed attempt to describe the universe of skiers.³² The strength of leisure organizations lies, it appears, in their ability to collect and organize the harder facts such as the *number of licenses or permits* if there are any involved, as in the case of hunting and fishing, or in the *numbers of units sold* as in boating (what about the growing secondhand market for boats?) or the *numbers of members* enrolled in formal organizations as in bowling. These too could become more rigorous and standardized with the assistance and guidance of an agency devoted to such systematic collection of data.

Measurement of Leisure Resources

Since the measurement of leisure resources or inputs is a task more for economists than for sociologists, it will be sketched lightly and only in general terms here. The resources for leisure are diverse in type and the documentation of their worth varies in availability and reliability. Following the suggestion of Clawson, these inputs can be divided into natural resources and man-made ones, cross-classified into those which are publicly or privately owned.³³

The key measures that would appear necessary to assess the supply trends in leisure are the space (land area) involved, the capital invested, and the manpower utilized. It does not seem an overstatement to say that there is little possibility at this time of bringing together the information required for a full-dress economic analysis of leisure in the same way that other industries are studied, partly because it is difficult to decide how much of a given area or resource is used for leisure purposes. How much of the national highway investment, for example, should be considered recreation, or how should wildlife preserves, open lands, rivers and other water areas be allocated for leisure purposes? Or how much of the publishing industry should be considered as educational and how much as recreation? In fact, every definitional problem of this sort on the output side has its counterpart on the input side.

Our inability to estimate the supply of leisure is also due to a lack of knowledge of land use, capital investment, and manpower utilization.

These gaps are largely in the private sector, for in the field of outdoor recreation the Outdoor Recreation Resources Review Commission has done outstanding work in mapping the federal, state, and local resources.³⁴ And some states, New York for example, have contributed more detailed inventories.³⁵ Still, however, the contribution of the private sector to the supply of outdoor recreation facilities is hardly known. Aside from the potential use of the data from the Census of Manufactures the only other known study analyzing a part of the leisure scene in depth is Baumol and Bowen's work on the performing arts.³⁶ Even in this intensive study the authors concentrated mainly on visible professional performing arts organizations; the large but relatively unknown amateur and semiprofessional resources had to be ignored.

While there have been impressive reviews of public policy problems in the performing arts³⁷ and public television,³⁸ there has been little concentrated research designed to collect and organize the basic economic facts of the leisure industries. Some of the data are actually available for those agencies which regularly gather the routine statistics of their operations, the public libraries of the nation being a case in point. For over a decade there has been published a fairly good national series reporting operating expenditures, capital investment, and manpower figures for most of the public libraries in the country.³⁹

Art, historical, and other museums have not been as systematically monitored. The professional and trade associations of leisure industries vary in their ability and willingness to gather their basic statistical facts of life. Perhaps only a centralized and well-funded agency could persuade or induce standardization of such activity.

Finally, a particularly ignored area has been the resources *producing* leisure skills, both amateur and professional. How many "leisure" teachers are there? Where do they teach, how are they trained, how much are they paid? A careful survey of the manpower involved in teaching leisure skills—from schools of baton, karate, or French cooking to the employees in the public schools teaching music, art, and sports—is an important facet of the entire picture, not only for the economic point of view but for the understanding of the institutional structure of leisure and its underlying values.

PROBLEMS OF DISTRIBUTION

Leisure time and dollars are unequally expended by various social groupings; leisure activities as well as leisure resources are clustered differentially in the nation. A full accounting of leisure trends re-

quires the mapping of these uneven distributions, not only because of our society's concern with equality of opportunity but also because of our need to understand more fully the social processes that generate class, ethnic, regional, and age-linked differences in leisure.

Socioeconomic Differences

What is the range of these distributional differences and how can they best be traced? First, and most obvious, are the differences in individual leisure patterns among the various occupational, income, educational, ethnic, and age groupings in the nation. The data for showing them comes by and large from individual level studies of dollar expenditures, time budgets, and activity inventories. The second difference is the unequal distribution of leisure resources in the nation. The basic data here are necessarily diverse, ranging from descriptions of local, state, and federal parks and recreation areas to aggregate community (again local to national) expenditures for leisure institutions. Also to be considered are the more scattered information sources about private leisure complexes, e.g., the ski resorts in New England, the theater industry in New York, the tourist establishments in Florida, and so forth.

A third kind of unequal distribution stands halfway between the first two. It is the clustering of specific types of people with known leisure patterns into particular communities or regions, either temporarily or for longer time periods. The retirement communities, summer or winter resorts, and bedroom suburbs are typical of the range.

Time Measures. Two kinds of material on individual differences in leisure time are at hand. One is the set of periodic special reports from the Bureau of Labor Statistics, which surveys hours of work for different types of workers. Table 4, for example, shows for different occupational groups the average weekly numbers of hours worked, and the proportions working less than thirty-five hours, thirty-five to forty hours, and more than forty-one hours per week. There are some impressive differences in these figures. The overworked executive emerges here as a strong, albeit statistical, reality as does the farmer and the underemployed domestic worker. More important than the differences *between* occupational strata, however, is the range of variation *within* them. The question raised is how different are the styles of life among the salesmen working less than thirty-five hours (30 per cent of the total) from that of the 36 per cent of the salesmen working more than forty-one hours per week? Even these figures are too crude.

TABLE 4. HOURS AT WORK AND OCCUPATIONAL GROUP, 1965

Type of occupation	Percentage distribution of weekly hours at work				Average hours weekly
	Less than 35 hours	35-40 hours	41 or more hours	Total	
Professional, technical, and kindred workers	16	49	35	100	41.4
Managers, officials, and proprietors, except farm	8	32	60	100	49.4
Clerical and kindred workers	20	64	16	100	37.4
Sales workers	30	34	36	100	37.8
Craftsmen, foremen, and kindred workers	11	52	37	100	42.3
Operative and kindred workers	14	53	33	100	41.2
Domestics	66	19	15	100	24.1
Service workers, except private household	29	41	30	100	37.8
Laborers	31	46	23	100	35.5
Farmers and farm workers	23	13	64	100	52.1
Farm laborers and foremen	42	17	41	100	39.4

SOURCE: Bureau of Labor Statistics, *Labor Force and Employment in 1965*, Special Labor Force Report No. 69, Washington, 1966, Table D-6, p. A-31.

Occupations should be even more specifically identified, since there is some evidence that leisure patterns vary quite sharply for different occupational groups; and within each occupation the hours worked by men and women should be differentiated.⁴⁰

For a closer look at the time spent on various activities, we must turn to time budget analysis. The studies reported by Robinson⁴¹ for example, contrast the time spent in a variety of activities by male "executives and professionals," "white-collar workers" and "labor" and for employed women (white-collar vs. labor) and housewives. Table 5 shows a contrast of the Lundberg 1934 study of leisure with Robinson's current work (1965-1966). There are too many internal comparisons and too many questions raised in this table for full discussion here—comparisons of total leisure or specific activities in the two time periods between men at different occupational levels, women in different occupations and between men and women. Does, for example, the Depression of 1934 as opposed to near-full employment of 1965 account for more sleeping, less work, and more leisure for men and white-collar working women (work hours excepted) in the earlier

TABLE 5. COMPARISON OF BUDGET AVERAGE FOR VARIOUS GROUPS IN 1934 LUNDBERG STUDY WITH SIMILAR GROUPS OF THE 1965-1966 STUDY (IN PARENTHESES)

Activity	Men			Employed women			Housewives	Overall
	Executives and professionals	White-collar	Labor	White-collar	Labor			
Nonleisure (Hours per day)								
Sleep	8.2 (7.7)	8.3 (7.6)	9.0 (7.4)	8.2 (7.6)	8.3 (7.4)	8.6 (7.5)	8.4 (7.5)	
Work for pay	6.2 (6.8)	6.4 (7.2)	5.9 (7.5)	5.9 (5.4)	6.7 (3.9)	0.1 (0.2)	4.5 (4.5)	
Care of self	0.7 (0.9)	0.7 (1.0)	0.8 (1.3)	1.0 (1.3)	1.0 (1.3)	1.0 (1.3)	0.9 (1.2)	
Transportation	1.2 (1.6)	0.8 (1.5)	0.9 (1.3)	1.1 (1.3)	1.0 (1.3)	0.8 (1.0)	1.0 (1.3)	
Household and children	0.9 (0.7)	0.5 (0.6)	0.6 (0.3)	1.2 (2.9)	1.4 (2.9)	4.2 (6.2)	1.9 (2.8)	
Total	17.2(17.7)	16.7(18.1)	17.2(17.8)	17.4(18.5)	18.4(16.8)	14.7(16.2)	16.7(17.3)	
Shopping	— (0.4)	— (0.3)	— (0.2)	— (0.5)	— (0.7)	— (0.7)	— (0.5)	
Leisure (Minutes per day)								
Eating	106 (78)	114 (73)	101 (76)	116 (59)	109 (52)	106 (79)	108 (71)	
Visiting	79 (68)	81 (74)	94 (39)	94 (74)	74 (132)	151 (138)	103 (95)	
Reading	74 (50)	61 (36)	95 (24)	43 (29)	38 (23)	84 (40)	68 (35)	
Entertainment	15 (11)	45 (13)	35 (13)	48 (14)	29 (16)	44 (10)	37 (12)	
Sports	40 (10)	34 (12)	35 (5)	19 (5)	20 (0)	16 (2)	47 (10)	
Radio	22 (5)	34 (4)	32 (10)	18 (5)	45 (7)	29 (2)	30 (5)	
Motoring	15 (2)	20 (2)	12 (1)	25 (4)	13 (1)	10 (3)	15 (2)	
Clubs	10 (5)	8 (8)	0 (5)	3 (7)	0 (5)	61 (12)	20 (8)	
Television	— (80)	— (75)	— (159)	— (58)	— (102)	— (75)	— (89)	
Miscellaneous	40 (51)	35 (51)	5 (24)	33 (61)	8 (64)	50 (65)	32 (54)	
Total leisure minutes	401 (360)	438 (348)	409 (366)	399 (306)	336 (402)	551 (426)	470 (381)	
Total leisure hours	6.7 (6.0)	7.3 (5.8)	6.8 (6.1)	6.6 (5.1)	5.6 (6.7)	9.2 (7.1)	7.6 (6.3)	
Total	23.9(24.1)	24.0(24.2)	24.0(24.1)	24.0(24.1)	24.0(24.2)	23.9(24.0)	24.3(24.1)	

SOURCES: 1934 data from Lundberg, F., M. Komarovsky, and E. McNerny, *Leisure: A Suburban Study*, Columbia University Press, New York, 1934; 1965-1966 data from Robinson, John R., "Social Change as Measured by Time Budgets," paper presented at American Sociological Association meetings, San Francisco, 1967.

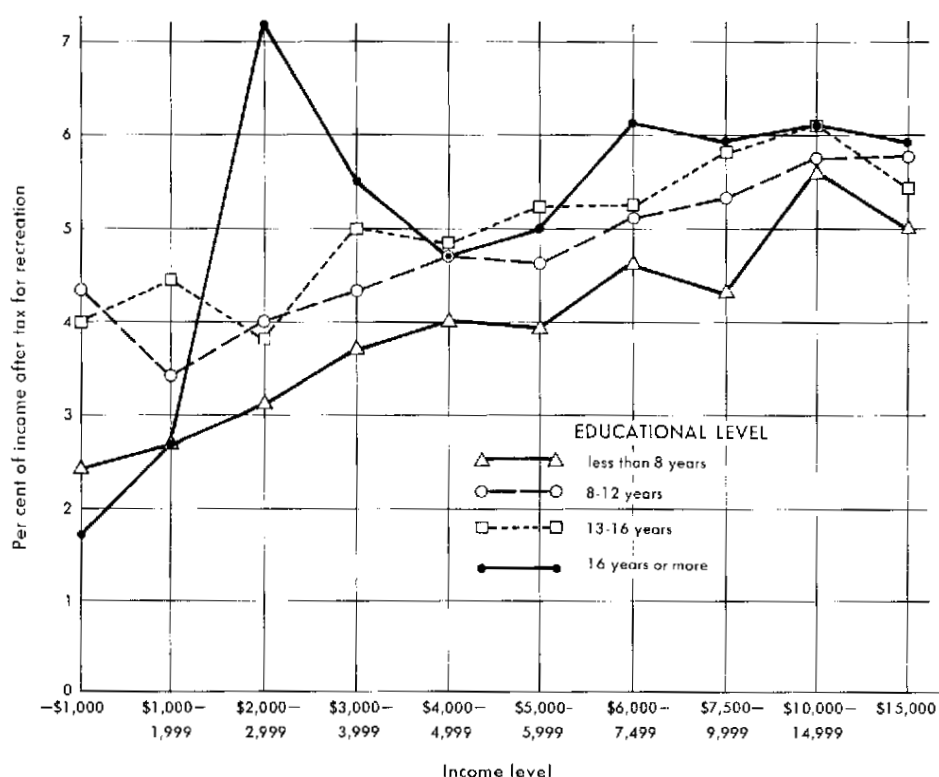
period? But where did the hour and a half to two and a half hours of television watching really come from and how do we explain the decline of time spent *reading* (almost cut in half) in the face of a known increase in expenditure for reading across these years?

An even more frustrating question is how this table, which indicates only slight differences in total leisure time among different occupations, is to be reconciled with Table 4, which showed executives working a far longer week than people in white-collar or blue-collar jobs. Is the combination of professional with executive categories in Table 5 responsible for this discrepancy or is it the inclusion of women in Table 4 but their segregation in Table 5, or is there no discrepancy at all? That is, is it possible that the higher-level occupations work longer hours but have the same amount of leisure because they spend less time (but maybe more money) on maintenance-nurturance? The working man might, for example, spend his *free* Saturday morning washing his car, but still not report this as leisure while the executive works Saturday morning and pays for an "instant" car wash on the way home. The problem is clearly to examine the various temporal patterns of leisure and work for specific occupational groups and for different income and educational levels.

Money Measures. Money for leisure as a whole and for specific kinds of leisure is unequally distributed. The single most comprehensive source of data is the Bureau of Labor Statistics' Survey of Consumer Expenditures. These are vast and relatively unexplored compilations showing for different income educational and occupational levels and for different family sizes and types living in varying kinds of communities the distribution of expenditures for leisure categories discussed above. From these data we can see, for instance, the extent of income and educational influence on leisure expenditures. Figure 3 shows the total recreational expenditures in 1960-1961 for ten income classes at four educational levels.

There is a discernible increase in the percentage of people's income (money after taxes) allocated for recreation as both income and educational levels rise. How significant are these differences—that is, how elastic are leisure expenditures and how does the spending for the different leisure subcategories shift as the total amount increases or decreases? The last question raises the following methodological problem: not all the families in the sample reported expenditures for all the items. For example, in 1960-1961 only 7 per cent of the lowest income group (less than \$1,000 per year) reported spending anything

FIGURE 3. RECREATIONAL EXPENDITURES BY INCOME CLASS AND EDUCATIONAL LEVEL, 1960-1961



SOURCE: Bureau of Labor Statistics, Survey of Consumer Expenditures, 1960-1961.

for *books* in contrast to 74 per cent of the highest (\$15,000 or more). The range of those reporting purchases of *newspapers* was much narrower—53 per cent of the lowest income group to 99 per cent of the highest. The question that has to be resolved, and resolved separately for each type of activity, is whether spending nothing can be considered as a “zero” dollar purchase. In other words, should book buyers be considered *qualitatively* different from nonbook buyers or should *everyone* be considered as part of the audience for books? This question is complex and will be discussed subsequently with problems of the structuring of leisure. Without resolving the issue it is still possible to demonstrate the uneven participation in different types of

TABLE 6. ALLOCATION OF LEISURE EXPENDITURES
BY INCOME, 1950

Type of leisure spending	Income	
	From \$3,000-\$6,000	More than \$6,000
	(percentages)	
Purchase of radio, TV, etc.	40	30
Admissions (movies, sports events, etc.)	17	18
Other (hobbies, sports equipment, etc.)	28	39
Reading (magazines, books, newspapers)	15	13
Total	100	100

SOURCE: Adapted from Wharton School, Study of Consumer Expenditures, Vol. IX, Table 1, p. 3, as cited in Ennis, P. H., "Leisure in the Suburbs," in William Dobriner, ed., *The Suburban Community*, G. P. Putnam's Sons, 1958, pp. 255-260. Occupational level and type of residence community have been held constant.

leisure activities as a function of income or education. For example, Table 6 shows the shift away from spending on radio, television, and records and toward "other" leisure (that is, presumably, made up of more active and individualized activities) as income rises.

While the data are crude compared to fine-grained demographic characteristics in the BLS material, the table suggests the kind of differences in leisure spending among various age groups and family types. These differences are restricted, though, to the narrow range of leisure categories included in the Consumer Survey schedule. For more detailed specific analysis of the distribution of leisure, we must turn to the single-purpose, one-time-only surveys. The gain in specificity and intensiveness of information is, however, traded for a loss in continuity.

These studies tell us, for example, that participation in voluntary organizations is very high at the upper end of the socioeconomic ladder and falls off quite sharply at lower levels.⁴² An important difficulty with these researches is the restricted definition of voluntary associational participation. Membership in formal organizations is taken as the criterion of participation in most of these studies; if this restriction is relaxed to include the more amorphous kinds of associational behavior among people of lower socioeconomic status, then it is less likely that such sharp differences in participation rates will be observed. Other studies show clear, strong social class differences in leisure pursuits, ranging from adult education⁴³ to attendance at the performing arts.⁴⁴ Still others show for extended lists of activities differential participation by socioeconomic status.⁴⁵

Activity Measures. All these data contribute to the by now familiar "brow level" categorizations of leisure activities, and there can be no quarrel with the general picture. Yet the brow-ranking of ten or twenty leisure activities on the basis of what social class pursues them "most frequently" distorts the fact that for almost any given activity the participant or audience mix is far broader than indicated. Leisure activities are rarely the exclusive property of a single social stratum. The participation of lower strata may be quite large in total numbers even though small in percentage terms. This can be shown dramatically for, say, television viewing. An audience for the so-called "cultural ghetto," that is, serious programming, contains proportionately more college-educated people than those with high school or less education. However, since the total number of the less well-educated is so much greater than those who went to college, the audience for serious programming has a rather high loading of low-educated individuals.⁴⁶ Furthermore, the boundaries sealing off the activities of one level from those of others are not impermeable. Activities once regarded as the province of higher-status people are increasingly enjoyed by lower strata. Conversely, the known participation of higher-status people in middlebrow or lowbrow activities is well documented.⁴⁷ While it is all but inescapable to associate specific activities with positions in the stratification system, the familiar "brow" categories are threadbare and ill-fitting. Differentiations by age, type of community, and region appear to be increasingly important determinants of leisure for one thing; the continued vigor of ethnic styles cutting across income levels for another, the diffusion and scatter of many activities across a widening range of social classes for a third, all point to a more heterogeneous and complex picture than in previous years.

Before the policy implications of this complex distribution of leisure can be understood an important methodological issue must be clarified: Some unequal distributions of leisure may result from individual choices among ubiquitous alternatives—almost all people have access to television, the choice of whether or not to watch is up to the individual (or family). Preferences for and participation in other activities are related to the availability of external resources—a ski slope, a museum, a bowling alley, a book store. What we do with our leisure depends in good measure on what choices are available. Most studies of leisure have ignored the matching of activity to availability of resources either because of an assumption (warranted or not) that the differential appearance of facilities is irrelevant or because the categories of activity explored are defined so broadly that

they are unaffected by the presence or absence of particular facilities. Such studies may indeed be valuable, but it should be clear that the more intensive, specific, and detailed a leisure inquiry is the more imperative it is to include an equally detailed inventory of the available leisure resources. Thus Steiner's study of television viewing carefully traced the viewers' "diet" and the screen's "menu." Johnstone's study of adult education did the same thing in a partial way by assessing a sample of individuals' adult education activities and at the same time measuring the educational facilities in their communities.

Mapping Leisure Resources

Finally, let us turn to the problems of mapping the distribution of leisure resources. The ORRRC materials cited above are major sources of information for outdoor recreation, and an agency for future collection and organization of leisure data. The careful methods of Baumol and Bowen are a model for data handling in the performing arts.

The distributional inequities of outdoor recreational areas are strangely parallel but opposite to those of the performing arts. As Clawson and Knetsch observe, ". . . over two-thirds of all the public non-urban recreation areas were under 40 acres in size, but altogether these small areas contain less than 1 per cent of the total recreation acreage in the country. In contrast slightly over 1 per cent of the areas were greater than 100,000 acres, but together these total 88 per cent of the total area."⁴⁸ Most of these large tracts obviously are in the West where population density is the lowest. With a few notable exceptions, most of the nation's cultural resources (museums, theaters, music) are comparably concentrated in the East.

There are basically two problems in measuring the distribution of leisure resources. One is the difficult administrative task of amassing the relevant data about the location of "outlets" from all the diverse leisure activities—bowling alleys, movie houses, libraries, television stations, and so forth. This is not an easy assignment. It requires considerable energy and patience to track down and develop rapport with these national and regional organizations and associations through which the local resources can be located. Standardized categories have to be developed and the various associations have to be persuaded to organize their record-keeping accordingly.

The second problem is both practical and theoretical. What are the sensible and relevant spatial boundaries for defining a community's (or an individual's) leisure resources? How are the different practices of record-keeping by leisure associations and public bodies going to be

coordinated? Some leisure data are reported on a state level, others by county, others on a local basis.

The theoretical problem is how to assign spatial boundaries that are "natural" to some population unit, taking into account the divergent distances that people will ordinarily travel for various leisure activities. Can the presence or absence of a leisure resource (supply) be decided upon independently of its use (demand)? Suppose a town in California has a lake a hundred miles away, a distance regarded by the population as a "normal" drive for a weekend. Is that lake equivalent to one twenty miles from an Ohio town which is a "normal" drive for its weekenders? If such a dependence on the users' habits places an intolerable burden on record-keeping and research facilities, then what spatial unit is to be selected? City and suburb are so interconnected in both work and leisure that they should be treated as a unit. The difficulty here is largely administrative, because record-keeping of leisure organizations rarely matches the proper geographical units.

ORGANIZATIONAL PATTERNS

How the average American spends his free time is, naturally, the main interest of the nation's pulse-taker. Total concentration on the individual, however, obscures a pervasive fact about leisure. Because of its peculiar location in the institutional structure there is a relentless pressure toward the organization of individual leisure activities into larger units.

Item: The *Middletown* (Conn.) *Press* announced on February 15, 1968, that Peter Spano had formed the Connecticut Ocelot Club with a charter membership of 14. Mr. Spano indicated that local veterinarians don't know how to treat exotic cats. The Connecticut Ocelot Club is, according to its founder, one of 800 such ocelot organizations in the United States.

Item: The *Chicago Daily News* reported in a four-part series (June 27-30, 1967) the activities of organized spouse-swapping groups in many of Chicago's suburban and middle-class city neighborhoods. Estimates range from 1,500 to 2,500 couples involved in weekly symposia, meetings, and swinging parties. The story reported: "Their most important rule . . . is that husband and wife are in it as a team." One man explained—"You get active in something new . . . so you drop things you used to be active in . . . I started out being active in churchwork I was head of a youth group. From there I went to the Masons and I dropped the churchwork. I used to be out three or four nights a week for lodge work . . . and then I started going into politics in the

new town that we moved into. So I stopped being active in the Masons. Then we got into this and about the same time, I got into a higher job, so I didn't have time for nothing else. I dropped it all."

Item: Gale Research's *Encyclopedia of Associations* (4th edition, 1964) described 87 national horticultural organizations with 17,177 state and local affiliates and a membership of 566,821 persons. It also lists 28 national philatelic associations, comprising 980 state and local groups with a total membership of 245,369. (The American Kennel Club Registrations in 1966 totaled 804,400 for 112 different breeds of dog, each with its own organization.) Also listed are 583 fraternal and ethnic national associations made up of 80,503 state and local units whose total membership is slightly over 28 million persons. In the American Contract Bridge League there are listed about 5,000 subunits whose members total 125,000. There are no listed national poker associations.

Item: *The New York Times* on February 2, 1968, reported that the long feud between the American Amateur Union (AAU) and the National Collegiate Athletic Association (NCAA) reached a momentary stopping point when the Sports Arbitration Board appointed by Vice President Humphrey concluded its deliberations, announcing "that the AAU is not entitled to be the sole governing body for domestic purposes," giving the NCAA's self-created federation (USTFF) the right to conduct open meets. The federation must apply for AAU sanction and the AAU must grant it. The warfare between the two bodies dates back several decades, erupting periodically. The last fitful peace treaty was imposed by General Douglas McArthur in 1963.

Item: *The New York Times* on December 17, 1967, reported that the introduction of the five-day work week in the Soviet Union has produced unanticipated problems: "The sale of vodka has increased sharply (a 25 per cent increase in Moscow) the reading of books has declined and people are wasting more time than ever on their days off standing in long lines at food stores, barber shops and bath houses." The inadequacies of Russian consumer services are seen as responsible. A Soviet official was quoted as saying, "Before changing work schedules of service and cultural facilities, an agreement must be reached on just what is rest. Rest is not just sitting around idle or going to visit friends. One of every 50 workers must be kept on the job to insure that people can do what they want during their free time."

These examples illustrate some of the organizational tendencies and problems in leisure. At the lowest level, to elaborate for a moment on the Russian five-day work week, there is the problem of the temporal envelope of leisure. Beneath the surface of ordinary observation there is a deep structuring of many social institutions which sustain a given mix of leisure intervals—the coffee break, the holiday, the weekend, the vacation. Sudden or even slow changes in familiar arrangements dislocate those invisible structures. The extension in the United States of paid vacations, experiments in the six-hour work day, three-

day weekends, and the increased work-force participation of women all invite the closest scrutiny. What is clearly needed is a twofold research and data collection operation. One part should be a careful measurement of the changes in the temporal patterning of leisure sequences, and the second and closely connected part should be an intensive study of the consequences of changes in these patterns.⁴⁹

Next, as the ooclot and spouse-swapping incidents illustrate, is the difficult problem of identifying the ceaseless and microscopic coagulation (and dissolution) of individual leisure interests into various forms of organized activity. These processes are resistant to study by ordinary social science research techniques, yet their consequences for the individual and the community may be great. The central task here, it seems, is basic research into the social processes which move individual preferences seen in the large as statistical aggregates through the stages of audiences or quasi-groups into the more or less self-conscious organized leisure organizations.

A step beyond this is the extension of special or community groups into larger, ultimately national associations. The stunning facts on the extensiveness of national leisure organizations calls attention to another basic organizational dimension of leisure. For every committed, nationally affiliated gardener, dog lover, or bridge player there is a large but unknown number of participants giving less time and effort. But how many? Each activity is likely to have a distinctive percentage of active fans to moderate or peripheral participants. This is the phenomenon of "concentration of use," readily illustrated in the contrast between newspaper and book reading. Most newspaper readers tend to read one newspaper a day so that, say, 80 per cent of the newspaper readers account for about 80 per cent of the newspapers read. Book reading is different; many people read few books, a few people read many books, so that about 20 per cent of the book readers account for 80 per cent of all the books read.

Leisure activities vary in the concentration or dispersion of their participants' engagement. Insofar as the activity requires or involves some professional expertise, especially situations involving the performance before an audience, then the shape of the concentration-of-use curve is critical. The reason is that both audiences and performers have to be educated to the standard of the medium. While no one knows how many peripheral audience members or fans, amateurs or semiprofessional actors, writers, tennis players, or whatever, are necessary to sustain the total system, the professionals need the amateurs and the amateurs need the professionals. In terms of maintaining a

cultural system over time, writers need readers from whom will come the next generation of writers.

The concentration-of-use configuration for a given activity is important in another sense. It can provide the basis of deciding how to draw the boundary of who is in and who is out of the activity for those statistical accounting purposes discussed in the previous section. The shape of the concentration-of-use curve for picnicking is probably much like that for newspaper reading—almost everyone goes on a picnic now and then. The concentration-of-use curve for sky diving, on the other hand, would probably show that 1 per cent of the population accounts for 90 per cent of the sky dives. This relationship does not imply that there is a simple relationship between total numbers of participants and the shape of the concentration-of-use curve, however. This is an empirical question and requires the collection of individual-level data on participation rates in a variety of activities. One final word on this point. Why do some leisure activities resist organization beyond a certain point and others pyramid into a vast national structure—bridge vs. poker, for example—and what is the relation between degree of organization and concentration of use?

Now to the implications of the final item—the clash between the AAU and the NCAA. As leisure organizations mobilize large numbers of people around one or more activities, the prizes become significant and the struggles approximate those of the political arena. These are in fact political struggles between social forces with immediate *interests* in the pragmatic sense and *ideologies* in the sense of a set of values being expounded and defended. The contestants vary considerably: here the ideals of the amateur athlete clash with the imperatives of modern organized athletics. Each of these sets of values expresses the beliefs of different institutional forces, not all readily identifiable.

There is another kind of contest that goes on in many cities in which various interests vie for domination of the “cultural” life of the community. Often active in these battles are the commercial booking agencies who dispatch specialists in community organization to help “the ladies” create community concert umbrella organizations, which, of course, hire their company’s performers. The recent acceleration in the growth of local and state arts councils (some 63 art centers are listed by the Associated Councils of the Arts in January, 1967) is but another example of the organizational drive in leisure.

It is important to examine and re-examine periodically which institutional forces are gaining or losing in the various leisure fields. How fares, for instance, organized religion’s entry into nonchurch leisure,

as seen for example in their attempts to move into the "coffee house" field or into outdoor recreation?⁶⁰ Or to what extent have federal governmental influences been extended in the field of boating through the U.S. Power Squadron, in the amateur radio field through civil defense, or other governmental arrangements with the 100,000 member American Radio Relay Association and in the amateur aviation field through the Civil Air Patrol?

A vast and complex political struggle has been waged over open lands in wilderness areas and over park and recreational areas closer to population centers. The participants have changed and have formed shifting alliances over the years. These controversies date back to the planning of most American cities, in fact, and thus offer a rich historical source of data for research into the course of such battles.

Closer to the individual is his immediate and extended family. To what extent is leisure retreating back into the confines of the family or to what is it cutting those ties under the influence of age- and sex-segregated leisure patterns?

The difficulties in measuring the organizational dimension in leisure are great. It is necessary to give more quantitative yet sensitive expression to the observations made on the question by the Lynds about the other "Middletown" back in 1925.

In the main . . . leisure activities are carried on by people in groups rather than singly. . . . many of the earlier informal ties are being displaced by more rigid lines of union and demarcation. (p. 272)

This trend toward greater organization appearing in so many leisure pursuits culminates in the proliferating system of clubs which touches the life of the city in all its major activities. (p. 285)

With greater organization has come increasing standardization of leisure time pursuits. . . . (p. 309)

Finally, the greater organization of leisure is not altogether a substitute for the informal contacts of a generation ago; opportunities to touch elbows with people are multiplied in the mobile and organized group life of today, but these contacts appear to be more casual and to leave the individual somewhat more isolated from the close friends of earlier days. In view of the tightening of social and economic lines in the growing city, it is not surprising that the type of leisure today tends in the main to erect barriers to keep others out. (p. 312)⁶¹

THE QUALITY OF LEISURE

This last question is the most difficult. All the refinements and complexities of measuring leisure discussed above do not provide answers to the questions: How well do we live as individuals; how human

and civilized is our society? Even if we could render an exact judgment as to the quality of our leisure it would still not be enough, because the whole life—work, maintenance, and leisure—in all its social settings have to be added, first for each individual and then summed for the total population. Yet all attempts to find such a calculus of happiness have failed. We are left with the view that the quality of society's leisure rests on a subjective judgment as to how well our values are being realized in a general way. Beyond that is the philosophical debate about whether or not the values are any good, or rather, which values comes first and which should be defended at all. This is not the place for that debate. Instead several different attempts to assess leisure's quality in quantitative terms are discussed.

The first is the question of standards. Many organized leisure interests respond to the intangible nature of leisure by establishing minimal conditions under which their particular activity can be carried out. Such standards or guidelines, for example, a limit to the number of visitors allowed per acre on certain kinds of open land, or rules defining the size and diversity of the book collection for a branch library, illustrate rational attempts to realize the values shared by the managers and presumably the users of an activity.

Long experience and consensus among experts are the only tools available at present for establishing standards. While the health, safety, and conservation standards underlying leisure guidelines probably rest on firmer ground and set some limits on them, the process of standard-setting is little understood. Agencies vary widely, for example, in defining the park acreage required per 1,000 population.⁵² How much are such decisions determined simply by the geography and the population density, how much by political negotiations among interested parties, and how much by studies of users' needs and substitution ratios? If it is useful to understand the social (and technical) processes involved in establishing standards for leisure activities, it is imperative that they be paralleled with studies of users' perceived satisfactions so that some sort, no matter how crude, of cost-benefit analysis can be made, relating standards to outcome. This can be done, from the user's point of view, by having them estimate the relative desirability of the activity under different conditions (i.e., different levels of the standardized items), by having them assign dollar values to the activity or alternative uses of their time and money at given levels of conditions.

A second approach to leisure's quality is to evaluate the extent that a person, a community, or a whole society has the structural opportunity

to carry into behavior leisure's main norm, "to do what you want to do." While this prescription clearly invites an examination of the individual's skills, motivations, and interests, we postpone that to examine the external conditions guaranteeing the exercise of the norm. In terms of the institutional setting of leisure described above, this means that the person or group requires both a *multiplicity* of institutional connections and the *flexibility* of moving among them, that is, there are limits on the extent to which any single institutional context (family, work, etc.) is able to constrain the person's behavior. Such a view is a defense of pluralistic society, an ideological bias frankly confessed. Other kinds of social structures might very well provide an equivalent to leisure guided by different normative directives, but if individual free choice of activity is the dominant prescription, then the conditions of multiplicity and flexibility of institutional engagement seem critical.

The useful research to fill in this viewpoint should consist of two parts. The first should specify for some population the patterns of their work, family, and other institutional attachments. The second should identify their leisure habits, and evaluate the cultural level of that leisure. This latter point is critical and involves an explicit or implicit subjective judgment as to leisure's quality. Only two studies fulfilling these requirements come to mind, Steiner's television study and Wilensky's analysis of the leisure habits of men in a specific group of occupations. Wilensky's study is especially noteworthy because both the degree of his respondents' institutional connectedness and their cultural level are carefully documented. Panels of judges evaluated the "brow" level of reading, television fare, and other leisure activities with high reliability. Sophisticated statistical analysis then confronted the institutional data and the leisure data. While the main substantive results are admittedly ambiguous, they point to several quite different styles of life. There is a low-competence leisure person who compulsively absorbs large doses of low-level television, engages in much aimless leisure and—this is critical—"has weak attachments to secondary associations and fluid friendships and . . . a short work week."⁵³ A second type identified as the "Happy Good Citizen-Consumer" is strongly attached to multiple institutions in his community and has "no leisure malaise." Another important conclusion of Wilensky's work is the blending and blurring of brow levels and the relative noncorrelation of leisure quality levels with ordinary demographic variables. Much in this study needs elaboration and qualification. It should also be noted that there is no attempt to give baseline estimates of the relative prevalence of these types in the total population, nor is there any

assessment of the availability of leisure resources. Nevertheless, this study is clearly an important research model that calls for continued elaboration and extension.

The third empirical attempt at quantifying the quality of our life are the National Opinion Research Center studies of "happiness."⁵⁴ Here again the survey method was used on a large sample of individuals in several different communities. In addition to the familiar background information, and some items on family, work, and other social relations, the critical part of the interview schedule probed into the respondents' positive and negative feelings toward his life. The picture that emerges is one of substantial satisfaction by a large majority of people, even though many people experience "negative affect." A full report of these studies is still in preparation; at present there appears enough solid evidence to say that reported satisfaction with life is a meaningful concept for the measurement of the quality of leisure.

The final example is the remarkable tour de force of Bernard Berelson, "In the Presence of Culture,"⁵⁵ wherein he turns his unremitting search for the facts on the question: "How much time do American adults voluntarily spend in the presence of culture in an average month and in what ways?" Culture is then given the following criterion—"any time—book, film, concert, television program, play, etc.—would presumably have to be given serious attention as part of a liberal education in a good college." Berelson then scans every conceivable source of information, surveys, published records, educated estimates for all possible media. "The answer is 447,021,000 hours, or an average of about 4 hours a month per American adult or about 4½ percent of his leisure time (figured at an average of three hours a day)." The study then differentiates this involvement by educational levels and by types of cultural fare.

What can be concluded about this effort? Its faults are obvious. There is no baseline against which to measure the result; is this a little or a lot of culture? There is no assessment of how much culture was *offered* during that month. The definition of culture is arbitrary and difficult to implement. Notwithstanding these problems, however, Berelson's method has the attractiveness of a large clean sweep. When modified to meet the difficulties mentioned above, the "head count" approach might provide a periodic census of cultural participation. When associated with institutional and educational information such a monitoring could be of considerable analytic value in addition to its cultural thermometer function.

In summary, while there is nothing like the immediacy of a percep-

tive intelligence describing the quality of a community's style of life in discursive terms there is also nothing more persuasive than a solid empirical estimate of that same style. Can these two modes of understanding be conjoined? This is the challenge that has to be met if a continuing evaluation of the nation's leisure is to be a vital one.

There is, finally, no easy way to assess the balance of forces in the ceaseless struggle among major institutions, including commercial enterprises, to enfold leisure, to define its meaning, and to validate its dominion in the name of the nation's highest values. The competition for leisure commitment often produces viewpoints that overburden leisure with more emotional or social freight than it should bear. We need to assess how much leisure as a whole is invaded by such postures as that of the American Bowling Congress.

Bowling is life. It is comedy, tragedy and drama . . . Only the right sport, the right organization and the right people could do these things: PROVIDE the greatest weapon against juvenile delinquency . . . TEACH the lessons of democracy and sportsmanship through upwards of 20,000 business and factory leagues where the bosses and employees play together . . . BAND 35,000 church teams into leagues for the benefit of these churches . . . And finally . . . bowling was best described as the great battleground for individualism against regimentation "Anyone who wants to put over a foreign 'ism' will have to lick the ABC first."⁵⁶

NOTES

I am indebted to my colleagues Hubert J. O'Gorman and Stanley Lebergott for critical readings of parts of this chapter, and to Ken Krich for assistance in collecting the materials. I am responsible for errors of fact or interpretation.

1. Contrast, for example, the definition and categories developed for a study of leisure expenditures in Fisk, George, *Leisure Spending-Behavior*, University of Pennsylvania Press, Philadelphia, 1963, p. 7, with the categories in a study of time budgets in Robinson, John P., "Social Change as Measured by Time Budgets," paper presented at American Sociological Association meetings, San Francisco, 1967.
2. National Recovery Administration, *Report of the New York Committee on the Use of Leisure Time*, 1930, p. 15.
3. Lundberg, F., M. Komarovsky, and E. McInerney, *Leisure: A Suburban Study*, Columbia University Press, New York, 1934, pp. 2, 3.
4. The following discussion of the structure of leisure is a modification of views stated in Ennis, Philip H., "Leisure in the Suburbs" in William Dobrin, ed., *The Suburban Community*, G. P. Putnam's Sons, New York, 1958, pp. 248-270.
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18. The three most important of these studies in recent years are the 1950 *Study of Consumer Expenditures, Incomes and Savings*, 28 vols., University of Pennsylvania, Philadelphia, 1957, 1958; the 1960 repetition of the 1950 study; and *Life Study of Consumer Expenditures* (conducted for Life by Alfred Politz Research), Simon and Schuster, New York, 1958.
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23. George Fisk in his *Leisure Spending-Behavior*, *op. cit.*, chap. 2, reaches essentially the same conclusion as shown in Figure 2 with respect to leisure expenditures, though he shows a less steady growth due to his use of refinements in per capita figures, constant dollars, and a different definition of leisure.
24. See *Life Study of Consumer Expenditures*, *op. cit.* The questionnaires of the BLS studies apparently do have great detail in their consumption categories, but they are not presented to the public in the fine-grained manner in which

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11. PROBLEMS IN THE MEASUREMENT OF HEALTH STATUS

Iwao M. Moriyama

THE AVERAGE life expectancy at birth in the United States increased from 47.3 years in 1900 to 70.2 years in 1964. The remarkable increase in longevity is frequently presented as evidence of health progress made by the general population in the United States.

What these figures conceal is that the increase in expectation of life has not been uniform over the age scale. For example, in the period 1900 to 1964 the increase in the expectation of life of white males at age sixty-five is only 1.5 years, whereas at age one it is 13.8 years. Actually, a large part of the increase in life expectancy at birth resulted from the reduction in the death rate during the first year of life. It is therefore relevant to examine the course of the infant mortality rate. This statistical measure is of special interest because it has long been regarded as the most sensitive index of the level of living and of sanitary conditions.

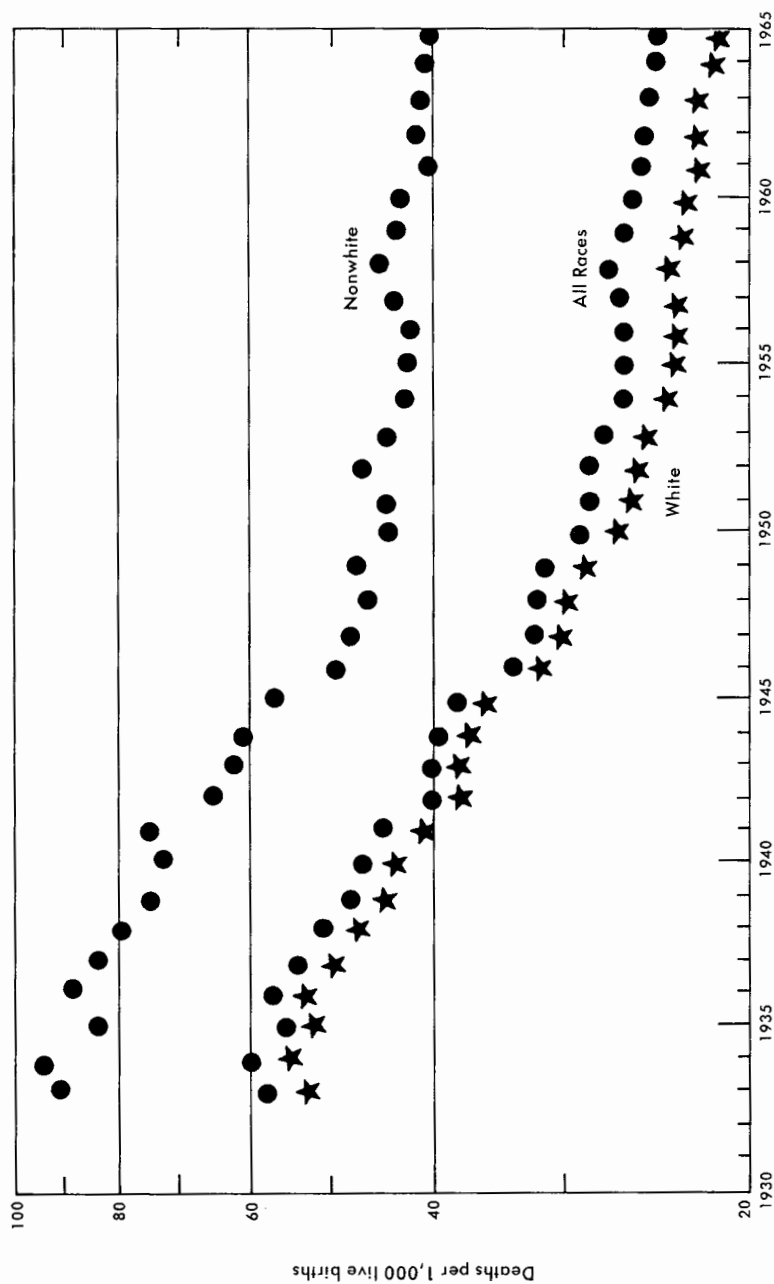
INFANT MORTALITY

For years the infant mortality rate declined at a rapid pace in the United States¹ (Figure 1). During the period 1933–1949, the total infant mortality rate decreased about 4.3 per cent each year. However, beginning about 1950, the rate of decrease dropped to 1.1 per cent per annum.

The mortality experience of white infants follows the same pattern as that for all infants. For the nonwhites, the deceleration in the downward trend is even more marked. During the period 1933–1949, the mortality rate for nonwhite infants decreased 4.6 per cent per annum. Between 1950 and 1964 the decline slowed down to 0.6 per cent per year. The gap between the rate for white and nonwhite infants has widened during the past decade.

Because of the change in mortality trend in the United States, the

FIGURE 1. INFANT MORTALITY RATES, BY COLOR: UNITED STATES, 1933-1965



SOURCE: National Center for Health Statistics

present situation in this country is less favorable relative to other countries than was the case twenty-five to thirty years ago. Although there are indications of a similar change in trend in other countries such as Australia, England and Wales, New Zealand, Norway, and Sweden, these changes are not nearly as great as those experienced in the United States. On the other hand, the rates for many countries of low mortality continue to decline. As a consequence, the infant mortality rate for the United States ranks relatively high in international comparisons. Also, the gap between the rate for the United States and those of other countries is widening.

The infant mortality rate in the United States is currently significantly higher than the rates for the various Scandinavian countries, the Netherlands, Switzerland, England and Wales, Australia, New Zealand, Japan, France, and a number of other countries. The difference between the infant mortality rate for the United States and the rates of other countries cannot be readily accounted for on the basis of differences in definitions, methods of data collection, and possible incompleteness of registration.²

Do these findings mean that the socioeconomic status of the U.S. population is declining, or that sanitary conditions in the United States are deteriorating? Are conditions in other countries improving, whereas they are now static in the United States? Or are these changes merely the results of a statistical artifact?

Because significant changes have taken place over the years in the United States in the distribution of live births by age of mother, birth order, birth weight, and other factors related to the increased risk of infant death, it is possible for total infant mortality to be affected by the change in the proportion of births by these characteristics even if the force of mortality remained unchanged. Adjustment of rates for the changing distribution of live births by birth order and age of mother does not make it apparent that these factors account for the change in the infant mortality trend. Neither the changing number of annual births nor the slight increase in the proportion of low birth-weight infants explains the phenomenon. There is little evidence to suggest that the leveling off of the infant mortality trend in the United States is not real.

Perhaps the most significant finding is the changing relationship between the deaths occurring in the neonatal (under twenty-eight days of age) period and those in the postneonatal (twenty-eight days to one year) period. During the past thirty-five years or so, the neonatal mortality rate has changed very slowly, whereas the postneonatal mor-

tality rate has declined rapidly. Most of the past decline in the infant mortality rate has been due to reductions in deaths from the exogenous factors (principally pneumonia and diarrhea and enteritis), and relatively little headway has been made in the prevention of deaths from factors relating to the birth process such as birth injuries, postnatal asphyxia, congenital malformations, and prematurity.

The leveling off of the infant mortality rate appears to be a consequence of two factors, the first being the deceleration in the rate of decline in the death rate for pneumonia. The second retarding effect is the relatively unyielding course of mortality among the neonates.

The infant mortality rate does not reflect the rising level of living during the postwar era. As for the future, further declines in the infant mortality rate in the United States are possible, but they are likely to be modest ones in the absence of important breakthroughs in the prevention of deaths in the neonatal period. Therefore, it appears that the infant mortality rate is no longer a particularly useful indicator of the level of living and sanitary condition for a country like the United States.

TOTAL MORTALITY

For a very similar reason, mortality data for the other ages are no longer adequate as measures of "health" of the population. Here again it has been shown³ that the past declines in the death rate at the various ages are due primarily to reductions in the death rates for the infectious diseases. With the successive introduction of pneumonia serum and the antimicrobials starting in the late 1930's, there was an acceleration in the rate of mortality decline. However, by 1950 the mortality from the diseases of infectious origin had reached a level where death rates for the infectious diseases no longer contributed in a major way to the over-all mortality rate.

The long-term decline in mortality from the infectious diseases resulted in a major realignment of the principal causes of death. As in the case of the causes of infant mortality, there has been a significant shift in the numerically important causes of death. The prominent causes are now malignant neoplasms and cardiovascular-renal diseases at all ages, congenital malformations through the childhood years, accidents and other violence from childhood through middle age, cirrhosis of the liver in middle age, and diabetes mellitus from middle age into old age.

New problems are also emerging. The dramatic upward trend of the chronic bronchopulmonary disease mortality from middle age onward

seems particularly significant. None of the trends for these causes of death exhibits the same rate of decline as the trend for the infective diseases. In fact, many of the trends are rising by different degrees. The combined effect of these various trends is to slow down the rate of decline of the total death rate (see Figure 2).

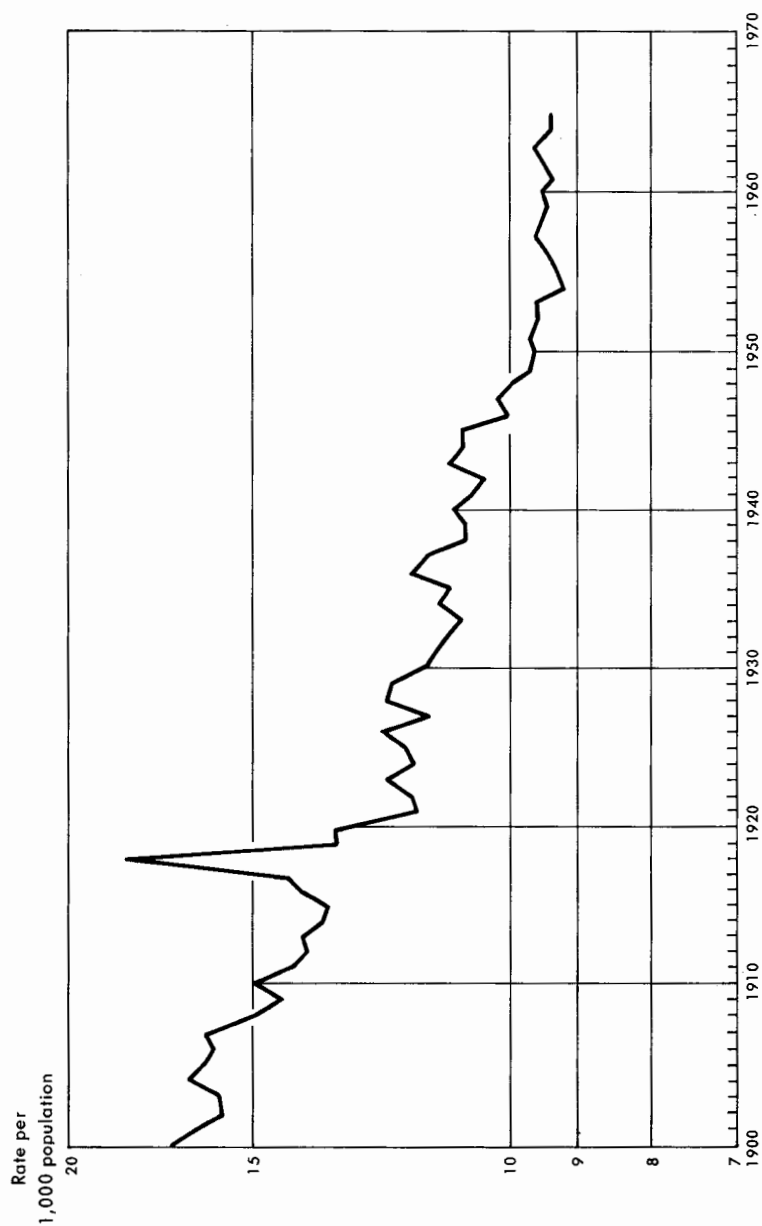
Further reductions in total mortality in the United States are possible, but any substantial decreases must come from the lowering of the death rates for the chronic noninfective diseases and for accidents and other violence. On the basis of a life table analysis of mortality data for 1949-1951, Woodhall and Jablon⁴ concluded that large increases in longevity will result, not as a consequence of the solution of any single disease process, but as the result of a general breakthrough on the whole front of aging. The elimination of certain causes of death such as the infective and parasitic diseases, malignant neoplasms, diabetes, and accidents would result only in small increases in the average life expectancy. The largest increment would come from the elimination of cardiovascular diseases as a cause of death. The cardiovascular disease problem was noted as an exception to the generalization about future changes in life expectancy.

The nature of the past changes in mortality and the present behavior of the death rates have made moot the value of statistics of deaths from all causes as a measure of health in countries like the United States. Fuchs⁵ defends the usefulness of mortality statistics and suggests that the lack of change in the death rate might be an indication that "the increase in health services has not resulted in improved health levels and the scientific advances of recent years have not had much effect on health. An alternative explanation is that changes in environmental factors in these years have had, on balance, a negative effect on health, thus offsetting the favorable effects of increases in services and medical knowledge. The latter explanation seems to be a real possibility."

This is an interesting possibility, but no evidence has been found to indicate that environmental changes caused a retardation in the decline of the death rate. Also, there is little to suggest that the increase in health services over the years has resulted in improvements in the level of health. On the other hand, the accelerated decline in the death rate resulting from the reduction of mortality from diseases of infectious origin does suggest that medical advances were responsible for the prevention of deaths from the infective diseases. Even here, it must be admitted this is a *post hoc, ergo propter hoc* reasoning.

Because various biological, environmental, demographic, and socioeconomic factors can influence the course of mortality, it is not possible

FIGURE 2. CRUDE DEATH RATES: UNITED STATES, 1900-1965



SOURCE: National Center for Health Statistics

to isolate the specific effects of any one factor nor is it possible to state categorically whether or not there has been any improvement in the level of health. This, of course, does not mean that mortality rates for specific diseases are not useful for the assessment of certain health problems. Mortality studies have done much to elucidate health problems and etiological factors relating to disease.

By far the most frequent use of mortality statistics has been in the study of trends and differentials in mortality. For example, from a study of mortality rates, Merrill,⁶ Dorn,⁷ Moriyama,⁸ and others have called attention to the chronic obstructive lung diseases as an emerging public health problem. The rising mortality trend of cancer of the respiratory system suggested lung cancer as a special problem, and subsequent studies of mortality experience of smokers and nonsmokers by Doll and Hill,⁹ Dorn,¹⁰ Hammond and Horn,¹¹ and others have implicated cigarette smoking.

Frequent use has been made of mortality data for epidemiological studies. These studies of descriptive epidemiology have been, and still are, of value in suggesting hypotheses to be tested. There are also numerous examples¹² of epidemiological studies utilizing death certificates as the starting or end points. These retrospective and prospective studies have dealt mainly with leukemia and other malignant neoplasms, cardiovascular diseases, and with maternal and perinatal events.

The great virtue of mortality data is the availability of a long and generally comparable series of statistics. There is no other body of routine statistics that provide diagnostic data for the country as a whole as well as for the smaller civil subdivisions.

Mortality data are available for many countries. For this reason, it has been recommended¹³ that the life expectancy at birth, the infant mortality rate, the crude death rate, and the proportionate mortality rate for ages fifty years and over be used as indicators of level of living for international comparisons.

The disadvantage of mortality data is that in countries where the need for statistical information is greatest, the data are nonexistent or of poor quality. An inherent weakness of mortality statistics is that diseases or conditions of high lethality are well represented, whereas nonfatal conditions do not have the same probability of appearing in the statistics. For example, almost all primary lung cancer deaths appear in the primary mortality tabulations, while conditions like arthritis, a frequent cause of disability, are not often found as causes of death. Also, one would not expect mortality data to provide measures which would indicate satisfactorily the levels of, say, dental health or mental

health. For example, it is not possible to deduce from mortality statistics that the 111 million adults in the United States had a total of 2.25 billion decayed, missing, and filled teeth¹⁴ or that approximately 22 million persons,¹⁵ or 13 per cent of the population in 1957-1958 were edentulous (have lost all their permanent teeth). Although dental diseases are rarely causes of death, they are resultants of nutritional problems in the general population, infections of the teeth and oral tissues, and inadequate oral hygiene and dental care.

Although mortality data were originally developed as a measure of health, the relationship between mortality and morbidity has not been clear. Recently, Moriyama and Chiang¹⁶ developed a model for estimation of prevalence and incidence of chronic diseases from mortality data using cardiovascular-renal diseases as an example. This model, based on the theory of competing risks, requires information on the number of deaths among the cases of chronic diseases. This statistic is not now generally available, but it may be possible to estimate this parameter from data on multiple causes of death when they become available, possibly starting with data year 1968 in the United States.

Lerner and Anderson¹⁷ refer to the death rate as the best indicator of health levels at an earlier stage in development of sanitation, public health practice, and medical knowledge. At the turn of the century the American Public Health Association and the American Medical Association jointly memorialized the Congress of the United States and proposed the annual collection of mortality statistics to provide measures of health conditions for the U.S. population. The results were the establishment of the Permanent Census Office in 1902 and the annual federal collection of mortality statistics.

At the turn of the century, tuberculosis, influenza and pneumonia, and diarrhea and enteritis were numerically the most important causes of death. As mortality from the infective diseases declined, the chronic noninfective diseases increased in relative frequency as causes of death. This change gave rise to problems in the classification and interpretation of cause-of-death statistics. The procedure for selecting the cause of death to be tabulated became more and more inadequate with the increase in chronic disease mortality because of the difficulty in determining and coding the underlying cause of death. There was growing dissatisfaction with mortality statistics and a consequent demand for morbidity data. In 1956, the U.S. Congress authorized the annual collection of statistics on illness and disability in the general population.

With regard to the measurement problem, Lerner and Anderson state that "health levels are now most adequately measured when mor-

tality rates are supplemented by morbidity rates and even by other measures of social well-being." They hasten to add that statistics of morbidity are only now becoming available and that their use poses numerous problems.

NATIONAL ILLNESS STATISTICS

Until the establishment of the National Health Survey in 1956, the only available national illness data related to the notifiable diseases. These are the communicable disease statistics collected for public health surveillance purposes.

The National Health Survey¹⁸ is a three-pronged coverage of illness in the general population. The Health Interview Survey is a continuing nationwide sampling and interviewing of households; the Health Examination Survey consists of physical examinations and testing of samples of individuals in a series of separate surveys; and the Health Records Survey is a series of sample surveys in which the sources of information are establishments which provide medical, dental, nursing, and other types of health-related care to the general population.

Health Interview Survey

The Health Interview Survey became operational in 1957. At the present time, members of about 42,000 households are interviewed each year covering about 134,000 individuals. The survey covers the civilian noninstitutional population and provides data on the incidence of illness and accidental injuries; the prevalence of diseases and impairments; the extent of disability; the volume and kinds of medical, dental, and hospital care received; and other health-related topics.

In the Health Interview Survey,¹⁹ morbidity is defined as a departure from a state of physical or mental well-being, resulting from disease or injury, *of which the affected individual is aware*. For the purpose of the survey, the concept of morbid condition is "further limited by specifying that it includes only conditions as a result of which the person has taken one or more of various actions. Such actions might be the restricting of usual activities, bed disability, work loss, the seeking of medical advice, or the taking of medicine."

The following are a few of the findings²⁰ from the Health Interview Survey:

During the period July 1964-June 1965 an estimated incidence of 400.9 million acute illnesses and injuries requiring either medical attention or restriction of daily activity occurred among the civilian non-

institutional population of the United States. This estimate represents an average of about 212.7 conditions per 100 persons per year which represents a slight increase over the incidence rate of 208.5 per 100 persons per year.

Acute illness and injury caused each person in the population an average of 8.3 days of restricted activity during the year, including about 3.5 days spent in bed. Acute conditions were responsible for an estimated 4.6 days lost from school per school-age child (6-16 years) and 3.4 days lost from work per currently employed person.

An estimated 87.3 million persons, or 46.3 per cent of the population, exclusive of the Armed Forces and inmates of institutions, reported one or more chronic diseases or impairments. The comparable percentage for the 12-month period ending June 1964 was 45.2.

An estimated 24.2 million discharges from short-stay hospitals involving one or more nights of hospital stay, or 12.9 discharges per 100 persons, occurred during the reference period ending between July 1964 and June 1965.

Data are also available on activity limitation resulting from various diseases and conditions. Generally speaking, diagnostic data obtained in population surveys through interviews are not particularly specific nor precise. Aside from response errors present in surveys of this type, many do not know the specific nature of their afflictions. In many cases, the respondent provides information concerning other members of the household. There is evidence to indicate that the information supplied by proxy respondents for other adults in the household is not as complete or accurate as that which those adults can supply for themselves. The inadequacy of diagnostic information secured by the interview method has been fairly thoroughly documented.^{21, 22, 23, 24}

Health Examination Survey

Undiagnosed or unrecognized disease is also a problem. There is no way of obtaining information on undiagnosed and/or nonmanifest disease without appropriate laboratory and direct physical examinations of a sample of the population. The Health Examination Survey²⁵ is designed to provide statistics on prevalence of specific diseases in certain segments of the population using standardized diagnostic criteria, and to secure distributions of the general population with respect to certain physical and physiological measurements.

In the first cycle of examination, the group selected for study was the adult population eighteen to seventy-nine years, inclusive. This cycle focused attention on certain cardiovascular diseases, arthritis and rheumatism, and diabetes. According to the results of the first cycle,²⁶ of the 111.1 million adults, eighteen to seventy-nine years, in the

United States in 1960-1962, some 14.6 million had definite heart disease and about 13 million had suspected heart disease. This represents a prevalence rate of about 13.2 per 100 population with definite heart disease and 11.7 with suspected heart disease. These estimates do not include the prevalence of heart disease in the approximately 1.4 million inmates of institutions not covered by the Health Examination Survey. Nor do they include the prevalence in the population eighty years and over, which numbered about 2.5 million in 1960.

The Health Examination Survey²⁷ indicated that about 2 million people in the United States have diabetes and are aware of it. In addition, there are probably about twice as many unknown as there are known diabetics, depending upon the interpretation of the results of glucose tolerance tests. Other interesting findings from the first cycle of the Health Examination Survey are prevalence data on arthritis and rheumatism, and dental diseases and defects; visual acuity and hearing levels; and the results of physiological measurements such as blood glucose, blood pressure, and serum cholesterol levels in the general population.

The second cycle dealt with children between the ages of six and eleven years, inclusive. Special emphasis was given to problems of growth and development. A physical examination was given as well as a selected battery of psychometric tests. A dental examination was also made, as were tests of respiratory function and exercise tolerance. Data from this cycle are now being processed.

The third cycle of the Health Examination Survey now underway is concerned with the population ages twelve to seventeen, inclusive. A physical examination is given with special reference to the stage of pubertal development, abnormalities, illnesses, and injuries which may affect growth and development. Psychological tests are also given to measure performance in various situations as related to growth in thinking, socialization, and motor coordination. Other tests include visual and aural acuity, respiratory function, electrocardiogram, exercise tolerance, and grip strength. Height and weight and other body measurements are also taken.

An important gap in national illness data relates to the mental diseases. The staff of the Health Examination Statistics Division has been conducting a series of seminars on the problem of devising a simple method of measuring the prevalence of mental disorders. This is an exceedingly complex area of measurement. Most of the data now available are based on statistics of utilization of psychiatric facilities. For example, Kramer²⁸ reported that the year-end resident patient popula-

tion of state and county mental hospitals increased at an average rate of 2.1 per cent per year between 1946 and 1955. From that year, the population decreased at about 1 per cent per year to the level of 504,604 patients at the end of 1963. This reduction in the population occurred at the same time that the admissions were increasing at an average rate of 7.4 per cent per year.

According to the Group for the Advancement of Psychiatry,²⁹ estimations of the frequency of mental disorders involve problems of changes in incidence, duration, and prognosis of mental diseases. The problem of measurement becomes even more complicated because "(1) social attitudes toward illness change and may affect the number of patients who seek help; (2) available psychiatric resources increase or diminish—contributing to an increase or decrease in the number of reported cases; (3) changes in diagnostic skills, fashions and nomenclature also increase or decrease the total number of reported cases in any specific diagnostic category."

It remains to be seen if a battery of tests can be devised and incorporated into the Health Examination Survey procedures to measure the magnitude of the mental illness problem. It also remains to be seen if suitable methodology can be devised for the measurement of certain physical diseases such as cancer and stroke.

Health Records Survey

The Health Examination Survey has certain limitations imposed by the type of diagnostic equipment possible for mobile units and by the fact that repeated examinations are not feasible. Therefore, the National Health Survey takes the third approach through the Health Records Survey. The purpose of this survey is to produce statistics on the characteristics of health services received by the U.S. population and the characteristics of those receiving the services.

An important component of the Health Records Survey is the Hospital Discharge Survey. This is a continuing survey of short-stay hospitals to obtain statistics on the use of hospitals, on services provided in hospitals, and on characteristics of the patients. Another component of the Health Records Survey is the survey of resident institutions. This is the population not covered by the Health Interview Survey. Data will be obtained for inmates of resident institutions, both medical and nonmedical. This includes long-stay hospitals, penal institutions, orphanages, nursing homes, homes for the aged, and other facilities providing domiciliary care.

With the various data collection mechanisms provided by the Na-

tional Health Survey, the measurement of the health of the population apparently would be a simple matter of adding the various pieces from the different surveys. However, the various components of the National Health Survey are not yet unified in terms of definitions, classification, population, and time coverage, so the different pieces cannot be articulated in a satisfactory manner. Perhaps more important is the lack of a conceptual definition of health capable of being translated into suitable operational definitions.

DEFINITION OF HEALTH AND DISEASE

The discussion up to this point has been concerned mainly with illness from disease, disability, and mortality. In turn, the terms "disease," "disability," and "mortality" have been used interchangeably to mean the obverse of "health." Also the term "health" has not been specifically defined and has been used in a general and loose sense.

From the dawn of civilization, man has been concerned with the question of health and disease. Galdston³⁰ refers to the Hippocratic treatise on *Airs, Waters and Places*, and suggests that Hippocrates was more concerned with the epidemiology of health than with the epidemiology of disease. Thus, Galdston believes that the epidemiology of health antedated that of disease. However, at present, much more is known about the epidemiology of disease than about the epidemiology of health.

Siegerist³¹ has the following to say about health:

Like the Romans and John Locke, we think of health as a physical and mental condition. "*Mens sana in corpore sano*" remains our slogan. But we may go one step further and consider it in a social sense also. A healthy individual is a man who is well balanced bodily and mentally, and well adjusted to his physical and social environment. He is in full control of his physical and mental facilities, can adapt to environmental changes, so long as they do not exceed normal limits; and contributes to the welfare of society according to his ability. Health is, therefore, not simply the absence of disease: it is something positive, a joyful attitude toward life, and a cheerful acceptance of the responsibilities that life puts on the individual.

Siegerist's idea is perhaps more succinctly expressed by the Constitution of the World Health Organization,³² which defines health as "a state of complete physical, mental and social well being and not merely the absence of disease and infirmity." It is easy to agree with the desirability of attaining the state of positive health, but it will be much more difficult to find agreement as to what is meant by "complete

physical, mental and social well being" or even as to the meaning of "absence of disease and infirmity." May³³ criticizes the WHO definition because no criterion is given "by which to decide where the disease state begins and ends. They suggest that 'norms' or 'health,' or 'disease and infirmity' are clear-cut notions, since they define one of the terms by opposing it to the other."

The WHO definition of health may serve the Organization admirably as an ideal or a slogan, but not as a goal to be achieved. Without satisfactory operational definitions of the various terms, it would not be possible to determine if and when a state of health has been achieved by any population.

There seems to be a general recognition of the existence of some kind of continuum between "health" or "well-being" at one extreme and death at the other extreme. However, there are various views as to the gradations that may exist between "perfect health" and "death." For example, Dorn's³⁴ rough representation of the health spectrum includes the various stages of disease leading to death. His continuum starts with perfect health and passes through conditions predisposing to disease, e.g., obesity, latent or incipient disease, early apparent disease, far advanced disease, and then to death.

In this scale, latent or incipient diseases are usually unrecognized by the person affected. As a rule, these conditions can be discovered only by special tests. Dorn lists as examples the earliest detectable stages of tuberculosis, diabetes, and cancer. Opinions may differ as to the stage at which these conditions should be diagnosed as the clinical disease of which they are the precursors.

The disease may or may not manifest itself for a period of time, but signs and symptoms begin to appear as the disease develops. The existence of a disease state may or may not be recognized by the individual affected, but for practical purposes only those diseases that have been identified should be counted. This will depend on the physicians' diagnoses.

In any disease, the person affected passes from health to disease, and either to death or freedom from disease. In chronic diseases, the change from absence of disease to manifest disease is frequently insidious and imperceptible. In addition, the state of ill-health may persist for years with alternating periods of exacerbation and remission, or with steady progression through various stages of disease until death intervenes.

In moving along the continuum, at what point is it decided that a state of health no longer exists? Is the presence of a predisposing factor

or condition such as slight overweight a deviation from health? Or is it necessary to move further down the scale to latent and incipient disease? If so, all nonmanifest diseases must be discovered through some kind of mass screening process. Although "manifest disease" is unquestionably a departure from health even in the early stages, the term is difficult to define. One operational definition might be that a manifest disease is what a clinician diagnoses. This, of course, would depend upon a number of factors, among them the diagnostic criteria used. This factor alone could make a large difference in the frequency count of disease. For example, it has been mentioned that the Health Examination Survey used a standardized technique in examining adults for heart disease. According to certain criteria, 14.6 million adults were considered to have definite heart disease. By another set of criteria, the frequency count could be almost doubled by including what have been termed the suspected heart disease cases.

Woolsey and Nisselson³⁵ refer to Dorn's spectrum of health as the continuum of pathological change. The other model is a scale of feeling, or lack of feeling, of well-being, which they termed the continuum of sickness. For this continuum, Merrell and Reed³⁶ visualized "a graded scale of health from positive through zero to negative health. On such a scale people would be classified from those who are in top-notch condition with abundant energy, through the people who are well, to fairly well, down to the people who are feeling rather poorly, and finally to the definitely ill. The word health rather than illness is chosen deliberately to emphasize the positive side of this scale, for in the past we have focused our attention thoroughly on the disease side."

Merrell and Reed give as an example of a meaningful classification with regard to health the classification used by Collins and Downes in the Eastern Health District of Baltimore. This scheme included the following rubrics: chronically ill, ill enough to require hospitalization, ill enough to be confined to bed at home, ill enough to require attendance of a physician, ill enough to prevent engaging in usual occupation, and no reported illness. Merrell and Reed felt that the greatest weakness of this classification was that it does not break down the title "no reported illness" into different degrees of positive health.

In commenting on the pathological and sickness scales, Woolsey and Nisselson point out that a large number of cases of chronic diseases would be counted identically in these two methods. However, the two methods do not necessarily agree on the point where the existence of a disease will be first noted because the feeling of sickness is not always correlated with the extent of pathological change. Woolsey and Nissel-

son also observe that the stepping up of the intensity of clinical examination is capable of producing more cases of chronic diseases than would be identified by increasing the intensity of interviews in a survey.

In the continua of pathological change and of sickness, measurement is confined to the identification of disease or disability. Some feel that this is a negative approach, and that the public health and medical profession should focus on health and wellness. Dunn³⁷ and others postulate varying degrees of positive health or different levels of wellness. The concept of positive health goes far beyond the mere absence of disease or disability. It is concerned with the functional efficiency of mind and body and social adjustment, and it is related to ability of individuals to realize their full potentials for valued achievement.

Reed³⁸ feels that the problem of positive health calls for research in physiological fields and that a real solution will come when we have better knowledge of the development of the human being as a functioning organism. Reed further states, "Rather than a seeming separation of pediatrics from geriatrics, we need knowledge as to the growth and development of physiological processes as we proceed from infancy to old age. This knowledge may give us some yardsticks for an evaluation of 'positive health' and may help us to lay down objectives in this field." Reed suggests the desirability of placing emphasis in the direction of positive health, but he also recognizes the lack of axes of classification that are necessary if it is proposed to carry through the notion of positive health.

The psychologists have been struggling with the concept of health and disease in their field. Smith³⁹ says, "The signs are increasingly clear that 'mental health' and its complement, 'mental illness' are terms that embarrass psychologists. . . . Unable to define or conceptualize them to our satisfaction, we use the terms in spite of ourselves, since they label the goals, however nebulous, of many of our service activities and the auspices of much of our research support. . . . And from as many quarters we encounter the call for a more positive view of mental health than is involved in the mere absence of manifest mental disorder. . . . The discussion goes on in articles, conferences, and symposia, with little evidence of consensus in the offing."

With respect to program activities in the field of public health, a pragmatic view is taken of the problems of health and disease by a work party of the American Public Health Association. In its report on "A Broadened Spectrum of Health and Morbidity,"⁴⁰ the following four levels of public health concern and effort are outlined: (1) mor-

tality; (2) serious morbidity; (3) minor morbidity; and (4) positive health.

The group regarded the conservation of life as the first essential of public health. Therefore, the reduction of mortality is listed as the first problem of concern to public health activities. As a public health program moves progressively from level (1) to level (4), it adds new concerns and efforts which do not displace the previous ones.

The work party saw the United States in 1960 as ready for level (3) work. With regard to positive health, they said, "Society's standards and expectations for all men must be such that public health, together with other social efforts, would naturally be concerned with helping all persons toward attaining a full sense of physical vigor and mental well-being and maintaining a constructive and wholesome relationship with others in a safe and pleasant environment that promotes longevity and happiness."

POSSIBLE INDICATORS OF HEALTH

The Study Group on the Measurement of Levels of Health⁴¹ of the World Health Organization classified health indicators into three groups as follows: (1) Those associated with the health status of persons and populations in a given area (vital statistics, nutrition, etc.); (2) those related to physical environmental conditions having a more or less direct bearing on the health status of the area under review; and (3) those concerned with health services and activities directed to the improvement of health conditions (availability and use of hospitals, physicians, and other health personnel).

Backett⁴² would add to this list biochemical and other indicators of "healthiness" such as the proportion of persons of various ages and different sexes with "normal" hemoglobin, "normal" blood cholesterol, and with "normal" urinalysis and the proportion of persons without, for example, ova in stools, palpable spleens, bacteria in the urine, and evidence of malnutrition; more specialized indexes, for example, verbal or other tests of mental functions (standardized intelligence test scores and scores on various tests of personality adjustment); and verbal or other tests of vulnerability to disease (various types of screening such as genetic screening, screening for special occupational risks or for other kinds of risks such as smoking, patterns of behavior, diet, poverty, etc.).

Backett suggests the possibility of crude measures of the health of

the population from information on the nature of the environment. Environmental hazards such as radioactivity, air pollution, insecticides, or other obvious features such as heat, cold, humidity, and absence of rainfall may provide useful indicators. Other measures of the physical environment may be clean water or adequate sewage disposal. Backett points to needed measures of the "healthiness" of the social environment such as tolerance of mental defects, illness, or sexual and other deviance, and to still another kind of indicator of the health of communities by the measurement of the extent to which health needs are met. This is a new concept where one aspect of the health of a community is determined by early case finding and bringing the cases of different diseases under effective treatment.

Sanders⁴³ method of measuring community health levels is based on the assumption that improved health care would increase survival and thus increase the known prevalence of disease in a community. A modified life table is proposed for measuring the adequacy of health services. In this analysis, the probability of survival is to be based on functional effectiveness, that is, ability to carry on daily living activities. The comparative health levels of different communities would then be measured in terms of productive man-years. According to Sanders' hypothesis, the community which shows a higher number of productive man-years per 100,000 conceptions will be considered to have more adequate health care even though it experienced higher age-specific morbidity rates for the various chronic diseases.

Sullivan⁴⁴ has extended Sanders' notion of probability of survival based on functional effectiveness and computed what may be termed the expectancy of disability-free life. According to these computations,⁴⁵ a person born in 1965 may look forward to about sixty-five years of life free of disability out of a total future lifetime of about seventy years. In terms of bed disability, the expected future lifetime free of bed disability is about sixty-eight years. The corresponding figures at age sixty-five years are: expectation of life, fifteen years; expected future lifetime free of disability, eleven years; and expected future lifetime free of bed disability, about fourteen years.

Disability-free years of life is a hypothetical measure subject to the same kind of assumptions implicit in the conventional life table. Because the major component of the measure is the expectation of life at specified ages, there may be some question as to the sensitivity of the measure. Also, both the expectation of life and the duration of disability may vary independently. Therefore, it would be necessary to analyze the two parts separately in the assessment of the disability problem.

Sanders proposes other measures of community health levels such as an index of preventive health services (laboratory determination of immunity levels); a measure of quality of medical care; the construction of life tables for mortality from various diseases; and a measure of early diagnoses of diseases.

Chiang⁴⁶ has developed a mathematical model of an index of health. This index is based on the probability distribution of the frequency and duration of illness, and the time lost due to deaths. Chiang asks the question, "What is the average fraction of the year in which an individual is healthy?" This fraction, or the mean duration of health, is used as an index of health of a population.

Woolsey⁴⁷ suggested the use of a disability measure as an indicator of the state of public health. More specifically, he used the distribution of the population according to chronic limitation of activity and chronic limitation of mobility. Woolsey points out that the greatest advantage of the scales that he suggested is that they are comparatively simple to apply in interview-type population sample surveys. On the other hand, the greatest methodological disadvantage is that the scales divide the population into groups that are widely different in size.

From the examples of proposed health indicators given here, it is apparent that various approaches can be, and have been, applied to the problem of measurement of the level of health of a population. Some deal directly with the population affected, while others are concerned with environmental factors or services which are presumed to have an impact on the population. Some are specific in that they relate to the effect of a particular factor, while others are more general in terms of the stimulus as well as response.

It is also apparent that the different indicators will give different results. Even the same indicator can produce widely different results by varying, say, certain definitions. An example was noted in determining the prevalence of heart disease in the Health Examination Survey, which may differ by almost as much as a factor of 2 depending on the criteria used in defining heart disease.

The question of which indicator to use would depend on the purpose to be served. Operational definitions also need to be developed, which would be necessarily arbitrary in nature.

PROBLEMS IN DEVELOPING AN INDEX OF HEALTH

Linder⁴⁸ expressed a need for an over-all index such as the Gross National Product used in the measurement of economic progress which

brings together a number of disparate factors into a single index of the state of national economy. He suggests the possibility of developing a GNP-like health index, the "gross national health deficit (GNHD)" that "could blend together in one number the days of healthful living lost each year by the chronically and acutely ill, the days of life lost through death that comes too soon and all the impairment suffered for lack of medical treatment and advice." In a less optimistic tone, Linder goes on to say "Even if it were logically possible to construct a GNHD, it might not meet all needs because it would still stress, as conventional health statistics do, the negative aspects of health." One could probably generalize further and say that any measure which has involved in it one or more arbitrary elements will not meet all the needs for a health index. However, what seems to be important here is not that an index be suitable for all purposes, but that it be useful for at least one stated purpose which is considered worthwhile.

Sullivan⁴⁹ reviewed the various methods of measuring levels of health and proposed a measure of impact of illness upon the population. The suggested index of health status involves morbidity in terms of disability. Those disabled for a particular day are to be classified as follows: (1) persons confined to resident institutions because of ill health; (2) persons not in resident institutions with serious continuing limitation of mobility; (3) persons not classified above with serious continuing activity limitations; and (4) persons not classified above who restricted their usual activities for the day in question. Because the various categories are mutually exclusive and the reference period is one day, the number of persons in each category is additive; and it is possible to obtain a measure of all persons disabled on a single day. This would provide a single measure of the impact of morbidity in the living population for that day. In practice, it would be desirable for the index to cover a longer period of time, possibly a year. For this purpose, the estimated number of days in each disability category will be summed to obtain the total number of days of disability during the year. Essentially, this is the morbidity component of Linder's GNHD.

An important advantage of this proposal is that a good part of the data, at least for the civilian noninstitutional population, are already available from the Health Interview Survey. Data on chronic activity limitation are collected annually, but information on chronic mobility limitation is obtained only periodically. Sullivan discusses these and other problems involved in the derivation of estimates of disability days. He also considers the problems affecting the reliability and validity of measures of morbidity based upon disability criteria.

Regardless of how it is derived, an index of health should have certain desirable properties, such as:

1. It should be meaningful and understandable.
2. It should be sensitive to variations in the phenomenon being measured.
3. The assumptions underlying the index should be theoretically justifiable and intuitively reasonable.
4. It should consist of clearly defined component parts.
5. Each component part should make an independent contribution to variations in the phenomenon being measured.
6. The index should be derivable from data that are available or quite feasible to obtain.

If availability of data is a requirement, the index would by necessity have to deal with the disease and disability part of the spectrum rather than the obverse, health or positive health. Further, the additive property of the component parts would severely limit the choice of indicators. Very few, if any, of the measures of the environment, for example, have a common denominator so that conversion into a single unit is not practicable. On the other hand, measures of disease and disability do seem to have several elements in common. For example, the common factor in incidence or prevalence of disease is the case of the disease. Thus, one can obtain a total count of diseases and disability. However, such totals would not be particularly useful without taking into account the impact of the various diseases in some meaningful term yet to be specified. This leads to questions such as how one equates a case of coryza with a case of primary lung cancer, or a case of congenital anomaly with a case of senile psychosis.

Disability data have as a common factor the duration of disability, which in itself is a rough measure of the severity of the condition. Here, a different set of questions arise. For example, how does one equate absence from school with absence from work, or days of limitation of usual activities with days in bed?

There are other problems in obtaining reliable and valid measures of behavioral evidence of morbidity. Sullivan points out:

... while a period of restricted activity is a more objective event than a report of "feeling ill" it also has a subjective aspect which must be recognized. The decision to reduce his usual activities reflects the individual's attitude toward illness and self-care, the expectations or demands of his family, his employer and his associates, his knowledge or beliefs about the symptoms present, and other social and cultural

factors. . . . Disability occurs in a social setting and, like other social phenomena, cannot be measured in isolation from the setting. It has social consequences regardless of the nonmedical factors which may influence its occurrence. A condition which disables a salaried worker may not disable a person paid on a daily basis—this makes the disability no less real for the salaried worker and his employer. Disability measures reflect the impact of morbid conditions as they influence the social participation of members of the population. In this respect they measure an aspect of morbidity important in any evaluation of the health status of a population.⁵⁰

The measurement of duration of disability in the living population might be accomplished through some mechanism such as the Health Interview Survey as suggested by Sullivan. The population that die during the study period presents something of a problem. Because one-half year, on the average, is lost by each decedent, Chiang took this figure as the time lost by each death. Some would like to go further and include the future lifetime of those who failed to live out their life expectancy. Such a figure may be fairly substantial. For example, the future years lost by the U.S. population in 1963 by failure to survive their life expectancy is about 34 million. This figure overshadows the estimated 12 million person-years of disability (based on restricted activity criterion) suffered by the civilian noninstitutional population of the United States during a period of a year. Thus, it may be seen that loading the future lifetime lost due to premature deaths into a single calendar year of disability experience gives undue weight to this factor.

The index of health, however it is derived, will presumably be a single measure of the impact of morbidity and mortality. However, such an index will be a nonspecific measure of the effects of disability, that is, it will not be possible to identify the specific factors that affect the index. In this sense, the index is much like the death rate. Many things including the age, sex, and color composition of the population would have an effect on the index.

Ideally, one would like to have built into the index certain components which give an indication of the factors influencing the duration of disability. It is not likely that this will be possible in the foreseeable future. It will usually require an epidemiological investigation of considerable complexity to determine the specific reasons for the improvement or deterioration in health indexes of this type.

If the index is to be limited to the measurement of nonspecific effects, it would be essential to have as one of the axes of classification the demographic characteristics of the population. Because the problems

of mortality and morbidity differ so much, the mortality component of the index should be differentiated from the morbidity component. If it were possible to obtain reasonably precise diagnostic information for the living population, it would be useful to have diagnostic categories as another axis of classification. Other cross sections should be taken for the purpose of delineating as specifically as possible the various problem areas. In this regard, morbidity surveys have a decided advantage over the registration method because it is possible to collect simultaneously new data for the population at risk and for those who are disabled. For example, the collection of income data for the survey population makes possible the computation of rates by income, whereas in mortality data it is necessary to collect mortality data on income and income data on the living population before rates can be computed. On the other hand, the sample size in morbidity surveys necessarily limits the kinds of data that can be collected. For example, it is not economically feasible to collect morbidity data for minor civil subdivisions in a national survey. Yet data for small geographic areas are useful in pinpointing or localizing problem areas. Thus, one can foresee the index of health being analyzed in various ways, each designed to narrow the problem area to possibly disease categories in identifiable segments of the population and/or to specific geographic areas.

Serious consideration of an index of health is just beginning. More work on a conceptual basis is needed. Because of the dynamic nature of health and disease, it is not likely that an index of health, no matter how health is defined or how the index is constructed, will satisfy all users from the standpoint of definition or of needs. Not all the data that might be needed to compute the index would be immediately available. However, it is important to make a start. The development and use of a health index based on a blend of morbidity and mortality data will represent an important forward step in the measurement of health progress in the United States.

SUMMARY

The substantial reductions in mortality rates in the past sixty years or so as measured by life expectancy at birth and by death rates suggest a remarkable improvement in the health of the general population. However, analyses of death rates indicate that the significant declines in the death rates have occurred primarily in the younger ages, especially among the infants. Great progress has been made in the prevention of deaths from the infective diseases. On the other hand, little, if any,

gains have been made in the reduction of mortality from the chronic diseases. For many chronic diseases, increases in mortality have been recorded. As a consequence, there has been a change in the rate of decline of the mortality trend in the United States. Further declines in the death rate are possible, but the gains in the future are likely to be modest until important breakthroughs are made in the prevention of the major chronic diseases.

In retrospect, it seems apparent that mortality rates have not been a particularly good index of health except insofar as the infective diseases are concerned. However, mortality data have been helpful in identifying the emergence of certain public health problems, and in the conduct of epidemiological studies.

A major problem in the development of a health index is the lack of a satisfactory conceptual definition of health capable of being translated into operational terms. The various definitions imply that "health" and "disease" are clear-cut notions, but none of the definitions, including that of the World Health Organization, is satisfactory for measurement purposes because none gives any criteria to determine where the state of health or disease begins and ends.

The existence of some kind of a health spectrum with optimum health at one end and death at the other extreme is generally recognized. In between there may be a continuum of disease or pathological change. Or it may be a scale of feeling of well-being, a continuum of sickness. Still another scale may relate to behavioral reactions to illness.

Some feel that the concern with disease or disability is a negative approach to the study of the problem of health. Positive health or levels of wellness should be the order of the day! Conceptually, there is much to be said for focusing on positive health. However, it will be some time before it will be possible to define and differentiate between the various degrees of wellness. Even if it were possible to measure positive health, variations in morbidity and mortality would still be major considerations under present conditions. Any effort to improve the general health of the population at this time would have to deal with problems of disease and disability.

Various kinds of health indicators have been suggested. These range from physiological measurements to those of pathological change, and from the physical hazards of the environment to measures of the social environment. Numerous approaches can be made to the problem of measurement of what might be termed the level of health of the population. Each of these approaches would measure something different, and

not many of the suggested indicators can be integrated into a single index.

An index of health utilizing disability data has been proposed. This index will provide a single measure of morbidity, and will have socio-economic meaning in terms of time lost by disability. For analytical purposes, it would be essential to express the index in terms of the demographic characteristics of the population to delineate as specifically as possible the contributions to the index made by the various segments of the population. Also, it would be useful to show causes of disability if reasonably precise diagnostic information can be obtained on the living population. Finally, some consideration might be given to the development of adjustment factors to take into account the effect of changes or differences in situations such as in health insurance coverage which may affect the behavior of the population in regard to curtailment of activities, or seeking of medical care. These adjustment factors will be useful in trend analyses or in assessing differences in the disability experience of different segments of the population.

Further clarification is needed on the uses to be made of the index. More study should be devoted to conceptual problems, especially those relating to the definition of health. Meaningful operational definitions will have to be developed. It will also be useful to make an empirical approach using available data. A study of variations in the numerical values should provide helpful leads for the eventual development of an index of health progress in the United States.

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12. TRENDS IN OUTPUT AND DISTRIBUTION OF SCHOOLING

Beverly Duncan

THE AMOUNT of knowledge that an individual can command is not limited by the amount of knowledge held by other individuals, except insofar as their aggregate holdings are the sum of what is known. The primary mechanism for transmitting knowledge from one individual to another, however, is schooling. The amount of schooling that one individual receives can be increased only by reducing the share of another individual or by increasing the aggregate amount of schooling provided by the society. Although to an extent the amount of schooling provided can be increased, a limit does exist. A society in which all are full-time workers in the education industry, either as students or teachers, is not viable.

How the available schooling is distributed among members of the society is a point of more than academic interest. If an opportunity for training is made available to some members, it must be denied others. The outcome of these decisions affects not only the life chances of the individual, but also the resilience of the society. Whether the decisions are made consciously or not, whether they are made centrally or not is irrelevant to their implications.

The aim of this chapter is a narrow one: to identify a few basic data sets that bear on twentieth-century trends in the output and distribution of schooling in America. Nearly all the sets brought under scrutiny have been generated by the United States Bureau of the Census, deservedly called the "fact finder of the nation." The selection of data sets is in part, of course, a matter of personal predilection. On the other hand, the Bureau has pioneered in the control of data quality and the use of the sample survey as a supplement to complete enumeration.

In the course of identifying these basic data sets, certain issues are raised about their analytical utility. The most fundamental issue revolves around the demographer's concept of the cohort.¹ Put quite simply, the value of information collected in different surveys is en-

hanced when it is compiled for a cohort, that is, a group of people who have in common the timing of an event defining their membership, such as birth in a given year or period of adjacent years. Moreover, schooling measured in years of school attendance or grades completed is cumulative and irreversible for the cohort as for the individual.

At least as early as 1910, census statisticians were cognizant of the potential utility of cohort analysis. In the General Report and Analysis of the census taken in that year, they noted that: "Each age group represents in its illiteracy the extent to which educational advantages were lacking or inaccessible during its childhood. If the illiteracy of each age group is designated as that of persons born in a given period of time, a much clearer view is obtained of the gradual improvement of educational conditions."² They also observed that within each cohort or group of persons defined by period of birth, the illiteracy rate recorded in the 1910 census was lower than the illiteracy rate recorded in the 1900 census which, in turn, was lower than the rate recorded in the 1890 census. They correctly identified the possible bases of change in the rate as a differential in mortality favoring literates and mastery of reading and writing skills by illiterates during the intercensal periods. Unfortunately, census statisticians have not pursued this lead as to the most effective format for presenting statistics on schooling.

No exhaustive review of the substance of discernible trends in education is attempted here.³ In reviewing the record on the output of schooling since 1900, three trends become clear, however: first, a threefold increase in the number of school years distributed among Americans annually; second, a one-third increase in the per capita output of school years; and third, an increase of some five-and-a-half years in the mean duration of schooling. Also to be observed are a growing equality in the distribution of education among members of successively younger birth cohorts and a diffusion of near-universal school attendance from age eleven toward both younger and older ages. Series on the schooling of subpopulations point to: an increasingly favorable position of males vis-à-vis females; a static influence of social background; and a lessening handicap associated with being a Negro.

OUTPUT AND DURATION OF SCHOOLING

In the year 1900, some 13 million school years were distributed among Americans. Thirty years later, the annual output of school

years totaled nearly 28 million. By 1960, the annual output had reached about 44 million school years. That the increase in the annual output of schooling over the past six decades has been on the order of threefold is a certainty.

Any closer estimate of the increase in the output of school years over the sixty-year span or of the change occurring in particular time segments of that span must be qualified. The available series on output is correct as to approximate magnitude, but the figures are not fully comparable from one year to another. The statistics have been generated by the Bureau of the Census either as part of the decennial-census operation or through sample surveys which have been carried out annually since 1945. Survey month, the attendance-period referent, constraints on the ages of the enrolled, and the definition of a school have not been constant, however; and each affects the count of school years produced (Table 1).

Some evaluation of the statistics that make up the record on aggregate schooling and its distribution among Americans is in order. A detailed account of the demonstrable deficiencies and the disturbing uncertainties that inhere in these data offers tedious reading. Since these are the data on which most substantive materials presented here rest, it seems expedient to outline their limitations at the outset nevertheless.

Data Evaluation

For expository convenience, the problems that arise from the choice of survey month and attendance-period referent are considered together. Similarly, the influences of constraints on the ages of the enrolled and the definition of a school are treated together. Finally, the series of observations which underlie the substantive materials presented here is compared with an alternative enrollment series.

Survey Date and Attendance Period. Because neither school entry nor school leaving occurs evenly over the course of a year, the survey month and the length of the period preceding the survey date to which the attendance query refers have pronounced effects on the size of the enrolled population. The evidence now at hand on gross and net turnover in the enrolled population in the course of a year is meager, but the volume appears sufficiently large to merit systematic investigation. Four pieces of evidence can be introduced.

(1). The data reported by the Bureau of the Census that bear most directly on the magnitude of fluctuations in enrollment from one academic term to another are twenty years old. A question on enroll-

TABLE 1. PERSONS ENROLLED IN SCHOOL, BY AGE, FOR THE
CONTINUOUS UNITED STATES AS RECORDED IN DECENNIAL
CENSUSES, 1900-1960, AND FOR THE UNITED STATES AS RECORDED
IN A SAMPLE SURVEY OF THE CIVILIAN NONINSTITUTIONAL
POPULATION, 1962 AND 1964

Year	Survey month	Attend- ance period, ^a in months	Age span ^b	School type ^c	Enrolled, by age			
					All	Under 5	5 to 20	21 or more
					(thousands)			
1900	June	12	Total	Any	13,367	41	13,161	150
1910	April	7	Total	Any	18,010	49	17,647	313
1920	January	4	Total	Any	21,763	45	21,374	345
1930	April	7	5+	Any	27,884	—	26,850	1,035
1940	April	1	5-24	Graded	26,759	—	26,293	466
1950	April	2	5-29	Graded	29,884	—	27,997	1,887
1960	April	2	5-34	Graded	43,538	—	41,444	2,094
1962	October	1	5-34	Graded	48,704	—	46,704 ^d	2,000 ^d
1964	October	1	3-34	Graded ^e	52,458	798 ^e	49,456 ^e	2,204 ^e

^a Period preceding survey date during which attendance at some time results in classification of individual as enrolled.

^b Ages of individuals included in the enrolled population.

^c Types of school for which attendance results in classification of individual as enrolled.

^d Includes half the enrolled persons ages 20 and 21.

^e Includes 439,000 persons attending nursery schools.

SOURCES: Decennial Censuses, June, 1900, through April, 1960; *Current Population Reports*, Series P-20, no. 126, September, 1963, and no. 148, February, 1966.

ment status was included in sample surveys conducted in October, 1946, April, 1947, and October, 1947. The attendance-period referent was the "current term or school year" in the October surveys and "since March 1" in the April survey. Sampling variability is sufficiently large to account for most changes recorded, but the increase in enrolled persons aged eighteen to twenty-four between the first and second terms of the 1946-1947 school year probably is not a chance fluctuation.⁴

(2). More recently the Bureau has compared enrollment counts estimated from the October, 1959, Current Population Survey with those based on the April, 1960, census. The difference amounts to no more than 1 per cent below the college level, but the census count at the college level was 12 per cent below the survey estimate. The apparent decrease in college-level enrollment is consistent with the substantial attrition between the first and second terms of the 1959-1960 school year reported by colleges.⁵

(3). An indication of the size of one component of gross turnover in the enrolled population recently became available through a 1965 resurvey of noninstitutional males who in 1963 had been between the ages of sixteen and twenty-one and were not attending school. Resurveyed were the 90 per cent of the original group who were civilians at the time of the 1965 survey. Some 13 per cent had re-entered school at some time since 1963; 8 per cent were attending school at the 1965 resurvey date.⁶

(4). Another component of gross turnover has been measured by following the schooling of a group of 1952 male college entrants over a ten-year period. Some 28 per cent had left college for a year or more, but returned and graduated within ten years of the date of first entry.⁷

Age Span and School Type. In 1940 constraints on the permissible ages of the enrolled were most severe and the definition of schooling which could lead to inclusion in the enrolled population was most restrictive. There has been subsequent relaxation of the constraints and broadening of the definition, but the inclusiveness of censuses taken early in this century has not been regained.

Justification for prejudgment of the age span within which the enrolled population will fall is not clear. Nonetheless, the Bureau of the Census has made such judgments, sometimes at the point of questionnaire design, other times at the point of tabulation specification. The pattern which seems to have guided the Bureau in this regard is more explicit in "a general picture of the structure of education in the

United States" which appeared in issues of the "Digest of Educational Statistics" prepared by the United States Office of Education. Among its features are an equation of grade one with age six and advances of one grade accompanied by increases of a year in age. Data generated by the Bureau of the Census cast doubt on the utility of any such representation of the educational structure as a guide for survey-operation procedures, however (Table 2).

TABLE 2. PERCENTAGES OF PERSONS ENROLLED IN SELECTED GRADES WHO ARE YOUNGER OR OLDER THAN THE AGES USUALLY ASSOCIATED WITH THE GRADE, APRIL, 1960

Grade	Usual age ^a	Younger	Older		
			All	1-3 yrs.	4 yrs. or more ^b
1	6-7	5.8 ^c	5.2	4.3	0.9
5	10-11	3.7	11.8	10.5	1.3
11	16-17	6.5	10.9	7.8	3.1
15	20-21	8.0	35.0	16.5	18.5
17+	22-24 ^d	3.6	62.7	41.1 ^e	21.6

^a As suggested in publications issued by the U.S. Office of Education; see text.

^b Underestimated because enrolled persons aged 35 or more excluded from basic tabulation.

^c Underestimated because enrolled persons age 4 or less excluded from basic tabulation.

^d Instead of 22-25 because grade distribution of enrolled 25-year-olds unknown.

^e Persons aged 25 to 29.

SOURCE: *U.S. Census of Population: 1960*, vol. I, part 1, Table 168.

The effect of change in the permissible ages of the enrolled cannot be measured systematically between successive observations because other procedural changes were occurring simultaneously. It can be established, however, that had twenty-four been set as the upper age limit of the enrolled in 1950 as in 1940, the count of enrolled persons aged twenty-one or more would have numbered 1.1 million rather than 1.9 million in 1950. No other procedural changes were introduced between these censuses which would influence significantly the enrollment count.

Attendance at any type of school resulted in the classification of the respondent as enrolled in the censuses taken early in this century. More recently, only regular schooling, "that which advances a person toward an elementary or high school diploma, or a college, university, or professional school degree," could result in classification of

the respondent as enrolled. The starting point of regular schooling has been lowered, however, from the first grade through the kindergarten to the nursery school in the past twenty years.

A possible resolution, and one which would facilitate comparison between surveys with their inevitable procedural changes, is a return to the inclusiveness of the early censuses. The school attendance of each respondent would be ascertained, irrespective of age. The enrolled respondent then would be queried with respect to the type of school. Under such procedures, the independent as well as joint effects of change in the age span and school type on the count of the enrolled could be determined with reasonable precision.

An Alternative Enrollment Series. A word of explanation may be in order about why the results of population surveys conducted by the Bureau of the Census rather than the compilations of school records made available through the Office of Education are relied on here for time series on schooling. First, the user of enrollment statistics is seldom interested only in aggregate schooling or a count of the enrolled. To investigate the distribution of schooling among socially significant groups in the population requires a linkage of enrollment status with other personal characteristics on an individual basis. Second, the statistical capability of the Bureau of the Census has been and is unmatched by the Office of Education. Whatever the potential merits of individuals and schools, respectively, may be as a source of statistics on schooling, the population-survey data have been collected under more carefully controlled procedures than the school-survey data.

Although less is known about the quality of enrollment data gathered by the Office of Education than about the quality of the enrollment data collected by the Bureau of the Census, a comparison of the two series may be informative (Table 3). The census count consistently has been lower than the school-record count, presumably because an enrolled individual can be counted only once in the census operation but can be enrolled in more than one school in a given year. The counts have tended to converge over time, however, save in 1940 when the census count of the enrolled is known to have been usually restrictive because of procedural decisions.

The comparison of alternative series is reassuring on one point, specifically, the slackening of growth in the output of school years during the 1930's. The census count of the enrolled in the year 1940 was smaller than the count a decade earlier, but the apparent decrease

TABLE 3. OUTPUT OF SCHOOLING IN THE CONTERMINOUS UNITED STATES IN DECENNIAL CENSUS YEARS, 1900-1960

<i>Item</i>	1900	1910	1920	1930	1940	1950	1960
Enrolled, in millions							
(a) Decennial census	13.4	18.0	21.8	27.9	26.8	29.9	43.5
(b) School records	17.0	19.8	23.9	29.4	29.5	31.1	44.8
Ratio (a) to (b)	.78	.91	.91	.95	.90	.96	.97
Mean days, annual							
(a) School year	144	157	162	173	175	178	178
(b) Attended per pupil	99	113	121	143	152	158	160
Ratio (b) to (a)	.69	.72	.75	.83	.87	.89	.90
Per capita output							
School years							
Decennial census	.18	.20	.21	.23	.20	.20	.24
School records	.22	.21	.23	.24	.22	.21	.25
School days							
Decennial census	26	32	34	40	35	36	43
School records	32	33	37	41	38	37	44
School-days attended							
Decennial census	18	23	25	33	30	32	38
School records	22	24	28	34	33	33	40

SOURCES: Table 1 and U.S. Bureau of the Census, *Historical Statistics of the United States and Continuation to 1962* thereof, Washington, 1960 and 1965, Series A-20, H-223, H-230, H-231, and H-321.

could be an artifact of procedural change. The school-records counts reveal no corresponding decrease, but the increase between 1930 and 1940 is notably less than the increase registered over any other ten-year span.

Per Capita Output and Duration of Schooling

An informative, though somewhat unconventional, measure of the American performance in the educational sphere is the per capita output of school years. Although the number of school years provided Americans annually increased threefold between 1900 and 1960, the per capita output of school years in 1960 was no more than a third greater than the per capita output in 1900.

In a sense, the school-year measure underestimates the growth of schooling since the turn of the century. That the mean number of days in the school year has increased is well known. Moreover, it is true, though perhaps less well known, that the mean days of school attended per pupil has risen even more rapidly than the number of days in the school year. When the per capita output measure is school-days attended rather than school years, growth in the per capita output of schooling between 1900 and 1960 is estimated as twofold.

Irregularities in the decennial changes in per capita output can be observed, however. Indeed, the changes appear so irregular that there is no basis for inferring a long-run trend toward a higher per capita output of schooling. The several alternative series—school years based on either census or school-records counts or years translated into days or days attended—indicate a peak per capita output in 1930, lesser output in 1940 and 1950, and a new peak in 1960. (The several series are shown in Table 3.)

For the past two decades, an annual output series can be constructed from results of the sample surveys conducted by the Bureau of the Census. Procedural changes have occurred, most frequently in the early years of the survey operation; but the series offers a reasonable approximation to a "true" record of the annual output of regular schooling since 1945 (Table 4). Year-to-year gains in the per capita output are recorded with the sole exception of the 1949–1950 and

TABLE 4. ANNUAL OUTPUT OF SCHOOLING IN THE UNITED STATES, 1945–1966

Year	Enrolled, millions	Per capita output	
		School years	Days attended
1945	25.5	.182	27.2
1946	27.2	.192	28.9
1947	28.7	.199	30.4
1948	29.5	.201	31.2
1949	30.3	.203	31.8
1950	30.3	.200	31.6
1951	30.9	.200	31.4
1952	32.5	.207	32.3
1953	34.4	.216	34.0
1954	36.1	.222	35.3
1955	37.4	.226	35.9
1956	39.4	.234	37.1
1957	41.2	.240	37.9
1958	42.9	.246	38.7
1959	44.4	.251	39.9
1960	46.3	.256	41.0
1961	47.7	.260	41.9
1962	48.7	.261	42.4
1963	50.4	.266	43.3
1964	51.7	.269	43.9
1965	53.8	.276	n.a.
1966	55.1	.280	n.a.

SOURCES: U.S. Bureau of the Census, *Historical Statistics of the United States and Continuation to 1962* thereof, Washington, 1960 and 1965, Series A-22 and H-231; and *Statistical Abstract of the United States: 1960, 1966*, Tables 2 and 164; *Current Population Reports*, Series P-20 for enrolled ages 5 and over.

1950–1951 period. A cumulative increase of a tenth of a school year or some seventeen days of school attendance is recorded over the twenty-year span.

It could be argued that the per capita output of schooling is only an awkward way of indexing the age structure of the American population and the conventions about the ages at which Americans attend school. To some extent this is true, but over time the ages of “usual” attendance have become both younger and older. To assume that changes in the per capita output of schooling reflect nothing more than changes in the relative numbers of the population falling within some fixed span of ages is too simplistic.

Most of the output of schooling during this century has been distributed among the nation's youth. Given their relative numbers, a specified mean duration of schooling implies an approximate per capita output; or a given per capita output implies an approximate mean duration of schooling. The per capita output now stands at about .28 school years, and recent projections of the enrolled and total populations through 1985 imply a per capita output of school years as great as .29.⁸ Although the current per capita output level probably is higher than any that has prevailed in the past, it appears sufficient only to maintain the trend toward a longer mean duration of schooling for each successive birth cohort of Americans.

To illustrate how the age structure of the population intervenes between the per capita output and mean duration measures, an arbitrary assumption about who receives schooling is made. All six-year-olds attend school, and as many individuals of each older age attend school as is possible given the aggregate schooling available for distribution. The age composition of the population is assumed to remain fixed for a more or less indefinite period. A given per capita output of schooling then can be equated with a mean duration of schooling.

The aggregate schooling or enrollment count and the size and age composition of the population as reported in a census are taken as given. With these items of information, the per capita output can be calculated; with the addition of the simplifying assumptions noted above, a mean duration of schooling for the birth cohort aged six on the census date also can be calculated. The irregular changes in per capita output observed between censuses taken in this century are found to be consistent with steady gains in the mean duration of schooling when allowance is made for shifts in the age composition of the American population (Table 5).

Measures of the mean duration of schooling derived in this fashion

TABLE 5. PER CAPITA OUTPUT OF SCHOOL YEARS AS REPORTED IN DECENNIAL CENSUS, IMPLIED MEAN DURATION OF SCHOOLING FOR SIX-YEAR-OLDS ON THE CENSUS DATE, AND GRADES COMPLETED AS REPORTED BY AMERICANS WHO WERE SIX-YEAR-OLDS IN THE GIVEN YEAR, FOR THE SOUTH AND NON-SOUTH, 1900-1960

Year cohort age six or census year	United States				South			Non-South		
	Per capita output	Implied mean duration	Grades completed		Per capita output	Implied mean duration	Grades completed by 1960	Per capita output	Implied mean duration	Grades completed by 1960
			By 1965	Utili- mate						
1891-1895	—	—	7.5	7.5	—	—	6.5	—	—	8.6
1896-1900	—	—	7.9	7.9	—	—	—	—	—	—
1900	.175	7.9	—	—	.159	6.1	—	.183	8.9	—
1901-1905	—	—	8.5	8.5	—	—	7.4	—	—	9.4
1906-1910	—	—	9.0	9.0	—	—	—	—	—	—
1910	.196	9.7	—	—	.202	8.4	—	.193	10.4	—
1911-1915	—	—	9.6	9.6	—	—	8.3	—	—	10.4
1916-1920	—	—	10.0	10.0	—	—	—	—	—	—
1920	.206	10.1	—	—	.222	9.7	—	.199	10.6	—
1921-1925	—	—	10.5	10.5	—	—	9.4	—	—	11.4
1926-1930	—	—	10.9	10.9	—	—	—	—	—	—
1930	.227	11.5	—	—	.235	10.4	—	.224	12.1	—
1931-1935	—	—	11.1	11.2	—	—	9.9	—	—	11.7
1936-1940	—	—	11.6	11.7	—	—	10.4	—	—	12.0
1940	.203	11.7	—	—	.212	10.5	—	.199	12.2	—
1941-1945	—	—	11.8	12.1	—	—	10.5 ^a	—	—	12.0 ^a
1946-1950	—	—	11.9	12.6	—	—	n.a.	—	—	n.a.
1950	.199	12.9	—	—	.212	11.9	—	.193	13.4	—
1951-1952	—	—	11.1	12.9	—	—	n.a.	—	—	n.a.
1953-1956	—	—	8.8	12.9	—	—	n.a.	—	—	n.a.
1960	.244	13.5	—	—	.247	12.6	—	.242	14.1	—

^a Cohort age 6 in 1941-1943.

NOTE: Ultimate number of grades completed estimated on the assumption that schooling continues with the current schedule of age-specific attendance rates.

SOURCES: Enrolled population and size and age composition of the total population from reports of the decennial census taken in the given year; grades completed by age and place of birth from *U.S. Census of Population: 1960*, Subject Report PC(2)-5B, Table 3, and *Current Population Reports*, Series P-20, no. 158, December, 1966, current schedule of age-specific attendance rates from *Current Population Reports*, Series P-20, no. 162, March, 1967.

are not proposed as estimators of educational attainment or grades completed. It is, nonetheless, of some interest to compare trends in the implied mean duration of schooling with trends in the mean number of grades completed, as inferred from the reports of Americans about their birth year and educational attainment. The series resemble one another rather closely. The similarity can be taken to mean that reports made recently by survey respondents about their educational attainment are, at least, compatible with enrollment counts made at past dates.

Similar calculations and comparisons carried out separately for the Southern and non-Southern populations reveal that the "effort" of Southerners to provide schooling has been somewhat greater than that of other Americans, although the performance of the South would be judged deficient on the basis of outcome. The per capita output of school years in the Southern states has exceeded the per capita output in the rest of the nation throughout most of this century. Nonetheless, Southern youth have received nearly two years less schooling than their age-mates in the North and West. The intervening factor is, of course, the relatively large number of children in the Southern population.

"Goals" for Per Capita Output

Looking ahead, it becomes clear that "goals" with respect to educational attainment cannot be set realistically without taking into account the full range of activities that must be performed to maintain a viable society and the age composition of the population which must perform these activities. Sixteen years of schooling seems a modest goal for children entering the school system around 1985. In fact, it is implied by projection of the trend toward a rising mean duration of schooling for successive birth cohorts. The Bureau of the Census recently has published alternative projections of the age composition and size of the American population in 1985.⁹ To provide an average of sixteen years schooling for the young in a population with the 1985 age composition would require a per capita output of no less than .26 school years and perhaps as much as .31 school years.

Complementary goals might well be an extension of "preschool" training to younger age groups and an expansion of training for adult members of the population. The training of children between the ages of two and five would call for a per capita output on the order of .08 to .10 school years. Training for a tenth of the adults would require a per capita output on the order of .06 school years. The per capita

output of all types of formal schooling then takes on values between .40 and .46 school years.

To meet these goals, perhaps half the members of the population would be engaged solely in education: some 46 per cent as students and 4 per cent as full-time workers in the education industry. In the absence of change in economic and family organization, the upper limit on the practicable size of the education sector is approximated. The full-time work force for industries other than education must be allocated a quarter of the members of the population. Infants and persons engaged in their care may account for a tenth. Unaccounted for is something on the order of 15 per cent of the population, including the permanently and temporarily disabled and the institutionalized.

Trends in enrollment and attainment typically are assessed and projected independently not only of one another, but also of probable or desirable changes in competing sectors of organized activity. The risk of officially promulgated, but inherently contradictory, "goals" increases as government attempts to influence performance in more sectors of activity. The practicable aggregate output of schooling remains a limiting factor on educational goals; although, to be sure, alternative goals are consistent with a given output.

THE DISTRIBUTION OF SCHOOLING

The aggregate schooling provided can be distributed among individuals in such a way that each receives the same amount of schooling as his age-mates, or all schooling can be directed to some small minority within the population. Several years ago, analysts of education statistics noted that "schooling is one of the most equally distributed 'goods' in American society." Moreover, the distribution of schooling among individuals appeared to be becoming more even over time.¹⁰

Readings on the distribution of schooling among members of birth cohorts who had reached their majority only a few years before the observation date were somewhat inconclusive, however. By no means all members of these cohorts had completed their schooling. Because the timing of schooling within the life cycle need not be constant from one cohort to another, it was difficult to forecast the shape that their educational distribution ultimately would take.

Statistics that bear on the equality with which schooling is distributed and the timing of schooling within the life cycle are now more voluminous. The relevant data sets are arrays by number of grades

completed and age-specific rates of school attendance, each compiled for cohorts identified by year of birth. Before offering substantive comment on trends in the equality and timing of schooling, it is appropriate to review some characteristics of the basic data, however.

Characteristics of the Data

The Arrays. Measures of the equality of distribution must be derived from arrays of individuals by the number of grades of regular schooling completed. Neither completion of nursery-school or kindergarten programs nor completion of training programs in the trades or business practice offered by "special" schools is reflected in the distributions. The extent to which coverage of these types of schooling would modify the measures of equality, or changes therein over time, remains unknown. There do exist, however, some indications of the frequency with which individuals obtain such training.

Among children who entered the regular school system before World War II, perhaps no more than a fifth and probably no more than a fourth began their schooling in kindergarten. This order of magnitude is suggested both by the school-attendance rate for five-year-olds as reported in decennial censuses and by the ratio of kindergarten enrollment reported by schools to the number of five-year-olds in the national population. Since World War II, perhaps as many as half the children have entered the school system through a kindergarten. By the mid-1960's, 9 per cent of the four-year-olds, 60 per cent of the five-year-olds, and 4 per cent of the six-year-olds were enrolled in a kindergarten. Moreover, 5 per cent of the three-year-olds and 7 per cent of the four-year-olds were attending a nursery school that included "instruction as an important and integral phase of its program of child care."¹¹

Results of a recent survey suggest that perhaps a tenth of the nation's adults have received training in "special" schools other than nursery schools and kindergartens. In 1960, a nationwide sample of heads of spending units were surveyed with respect to their schooling. Eleven per cent of the heads in the age range eighteen to fifty-four reported that they had completed exactly twelve grades in the regular school system and had, in addition, some training outside that system.¹² Spending-unit heads are perhaps more likely to have received such training than other adults. When allowance is made for the possibility of combining "special" training with formal schooling of fewer or more than twelve grades, however, an estimate of 10 per cent for the adult population as a whole seems conservative.

A second set of issues concerns the form of the array. Its detail, that is, whether the distribution is by single grade or by grouped grade levels, varies from one tabulation to another. A constant feature is, however, the open-ended terminal interval. When information on grades completed began to be collected by the Bureau of the Census in 1940, no more than 3 per cent of the members of any birth cohort had completed as many as seventeen grades. The open-ended interval of "college, five years or more," may then have been appropriate for tabulation purposes. As many as 6 per cent of more recent birth cohorts are completing seventeen grades, however. The distribution of this highly educated group by number of grades completed is not known, yet some assumption about their attainment must be made in order to estimate the total number of grades completed by a cohort and the equality with which the grades have been distributed among cohort members.

There are available counts of the number of higher degrees conferred each year since 1870, but these fail to yield a satisfactory estimate of the mean grades completed by cohort members who have completed at least seventeen grades. A first, and the less serious, problem is coverage. Completion of the seventeenth grade need not result in the receipt of a master's (or equivalent) degree. The more serious problem is posed by the fact that recipients of the doctorate in a given year include individuals who have received the master's degree no more than one year or as many as twenty years earlier and are still more heterogeneous with respect to birth cohort. The ratio of doctorates to master's degrees is found to be highly sensitive to the assumed time lag between degrees (Table 6). Moreover, an assumption that the "true" lag has remained constant over time appears untenable. Discernible in the basic series on degrees conferred, for example, is the impact of World War II: the dearth of doctorates awarded in the war years; the "making up" in the immediate postwar period. Implied, of course, is change in spacing between the master's degree and the doctorate.

Quite arbitrarily, the problem has been resolved by assigning a mean of eighteen as the number of grades completed by the group "college, five years or more" in cohorts reaching the age of six before World War II and a mean of nineteen as the number of grades completed by members of this group in more recent cohorts. The relative numbers now receiving postgraduate education are sufficient, however, to justify the routine collection and reporting of more detailed information on the attainment of the nation's most highly educated group.

TABLE 6. GRADUATE DEGREES CONFERRED BY
AMERICAN INSTITUTIONS OF HIGHER EDUCATION,
1912-1962

Year (ratio base)	Degrees conferred ^a		Ratio, doctor's to master's, with lag (yrs.)		
	Master's	Doctor's	4	6	8
	(thousands)				
1912	3.0	0.5	.22	.18	.20
1914	3.3	0.6	.17	.19	.26
1916	3.9	0.7	.16	.21	.28
1918	2.9	0.6	.29	.38	.49
1920	4.3	0.6	.26	.33	.34
1922	6.0	0.8	.24	.24	.38
1924	8.2	1.1	.18	.28	.32
1926	9.7	1.4	.24	.27	.29
1928	12.4	1.4	.21	.23	.22
1930	15.0	2.3	.19	.19	.20
1932	19.4	2.7	.14	.15	.17
1934	18.3	2.8	.16	.18	.19
1936	18.3	2.8	.18	.19	.13
1938	21.6	2.9	.16	.11	.09
1940	26.7	3.3	.09	.07	.15
1942	24.6	3.5	.08	.16	.27
1944	13.4	2.3	.30	.49	.57
1946	19.2	2.0	.35	.40	.47
1948	42.4	4.0	.18	.21	.21
1950	58.2	6.6	.15	.15	.15
1952	63.5	7.7	.14	.14	.15
1952 ^b	63.6	7.7	.14	.14	.15
1954 ^b	56.8	9.0	.16	.17	.20
1956 ^b	59.3	8.9	.17	.20	.24
1958 ^b	65.6	8.9	.18	.22	—
1960 ^b	74.5	9.8	.19	—	—
1962 ^b	84.9	11.6	—	—	—

^a Master's includes second professional degrees; doctor's includes equivalent degrees.

^b Includes Alaska and Hawaii.

SOURCES: U.S. Bureau of the Census, *Historical Statistics of the United States and Continuation to 1962* thereof, Washington, 1960 and 1965, Series H-333 and H-336; and *Statistical Abstract of the United States, 1966*, Washington, 1966, Table 194.

The Rates. Schedules of age-specific rates of school attendance as of the survey date are commonly reported. Such a schedule does not represent the relative frequency with which individuals of any given age on the survey date have attended school in the past. Neither does it represent a forecast of the relative frequency with which individuals

of any given age on the survey date will attend school in the future.

In fact, because age-specific rates of school enrollment have been increasing over time, the schedule of rates as of a given date consistently overstates the rates of attendance at young ages relative to the rates of attendance at older ages by comparison with a schedule of rates representing the actual experience of a birth cohort (or the group of individuals of any given age on the survey date). The point can be illustrated readily with reference to selected rates drawn from recent decennial censuses. Shown below are attendance rates at the ages of six and sixteen as reported in the censuses of 1940, 1950, and 1960.

<i>Census</i>	<i>Rate at age</i>	
	<i>6</i>	<i>16</i>
1940	68	—
1950	76	81
1960	—	86

These same rates are displayed below in a format which facilitates cohort analysis.

<i>Cohort age six in</i>	<i>Rate at age</i>	
	<i>6</i>	<i>16</i>
1940	68	81
1950	76	86

Schedules of attendance rates reported in the decennial censuses can be spliced in such a way that they approximate a "true" cohort schedule. Available in successive censuses are the rates of attendance by single year of age. Assume that the cohort aged six on the census date attends school at the rates reported in that census between the ages of five and nine; that between the ages of ten and fourteen, cohort members attend school at rates which represent an average of the rates reported in the census taken when they were six and the census taken ten years later, when they were sixteen; and that between the ages of fifteen and nineteen, the cohort attends school at the rates reported in the census taken when they were sixteen. The hypothetical cohort schedule constructed in this way can be faulted, but a better alternative is not obvious.

Through its recurring sample-survey operation, the Bureau of the Census has the capability of generating true schedules of school-attendance rates for cohorts born during the past three decades. This

involves nothing more than the tabulation of data collected through the annual October survey of school attendance by either enrollment status and single year of age or enrollment status and single year of birth. Six-year-olds covered in the first survey, that of October, 1945, had been born between October, 1938, and September, 1939, for example. As seven-year-olds, this cohort appeared in the survey conducted in October, 1946. The cohort appeared in the survey conducted in October, 1956, as seventeen-year-olds; and in the October, 1966, survey as twenty-seven-year-olds.

Should the argument be invoked that sample size is too small to calculate annual attendance rates by single year of age or birth, two counterarguments can be set forth. First, a rate has been published for a single year of age group on occasion. Second, a proper pooling of data from successive surveys would yield an enrollment schedule by a single year of age for a multiple birth-year cohort. Such problems as retabulation may pose do not seem sufficiently severe obstacles. Until the Bureau of the Census undertakes to arrange data from the recurring surveys of attendance in such a way that repeated observations on a cohort can be effected, the timing of schooling must be inferred from the hypothetical cohort schedules constructed from decennial census data.

Equality of Distribution

Among individuals who reached the age of six shortly before World War I, the most-educated fifth received some 30 per cent of the schooling; the share of the least-educated fifth was about 10 per cent. The share of the most-educated fifth fell by about three percentage points for the six-year-olds of the late 1930's, and a corresponding increase was recorded in the share of the least-educated fifth. The six-year-olds of the 1940's have not yet completed their schooling, but projected distributions by grades completed imply no lessening in the equality of distribution (Table 7).

The relative equality with which education is distributed can be highlighted by contrasting the education distribution with the income distribution.¹³ The top fifth of the spending units received just over half the aggregate family personal income in the early 1930's and about 45 per cent of the income in the years since World War II. The share of the bottom fifth has amounted to no more than 5 per cent. The corresponding measures on the education distribution are a little less than three-tenths for the top fifth and a little more than a tenth for the bottom fifth.

TABLE 7. PERCENTAGE OF AGGREGATE SCHOOLING RECEIVED BY
THE MOST-EDUCATED AND LEAST-EDUCATED MEMBERS OF COHORTS
AGE SIX BETWEEN 1906* AND 1950

Year cohort age six	Most educated			Least educated			Gini co- efficient
	10%	20%	30%	30%	20%	10%	
1906-1910	17.7	31.6	44.8	16.4	8.7	2.6	.23
1911-1915	17.1	30.6	43.1	17.5	9.5	3.1	.21
1916-1920	16.3	29.2	41.2	18.2	10.2	3.9	.19
1921-1925	15.7	28.3	39.7	18.6	10.9	3.8	.18
1926-1930	15.5	27.9	38.9	19.1	11.2	4.2	.16
1931-1935	15.2	28.0	38.9	19.7	11.5	4.4	.16
1936-1940	14.7	27.3	38.4	20.9	12.4	4.7	.14
1941-1945	15	28	39	21	13	5	.15
1946-1950	15	27	39	22	14	6	.13

SOURCES: *U.S. Census of Population: 1960* for cohorts 1906-1910 through 1931-1935; *Current Population Reports*, Series P-20, no. 158, December, 1966, for cohort 1936-1940, and Series P-25, no. 305, April, 1965, for cohorts 1941-1945 and 1946-1950.

It could be argued that the equality with which education is distributed is overstated because the unit is a grade completed. The cost of providing a year's schooling increases with the grade level. Hence, were a dollar value attached to each grade completed, the equality with which education was distributed would diminish. Appropriate dollar values per grade are open to question. Simply assume that per-grade costs are in the ratio of 3 at the elementary level, 5 at the high-school level, 8 in the thirteenth and fourteenth grades, 12 in the fifteenth and sixteenth grades, and 17 thereafter. The top fifth of the six-year-olds of 1926-1930 received 36 per cent of the schooling, and the bottom fifth received 9 per cent. It seems likely that the equality of the education distribution will remain greater than the equality of the income distribution under any reasonable translation of grade units into dollar-cost units.

Although the equality with which schooling is distributed has increased over time in both the Southern states and the states to their north and west, education in grade units has been distributed with less equality in the South at any given time. There is, however, some evidence of convergence between the Southern and non-Southern systems in this regard (Table 8). Minor qualification on the conclusion is necessary because the distributions which underlie the measures of equality pertain to persons born in or residing in the South. That they received their schooling within the region is not a certainty.

Barriers in School Progression. The increasing equality with which the distributive process operates in the regular school system implies change in the shape of the distribution by grades completed. At each grade level, the formal schooling of some individuals comes to an end; others continue to progress through the graded system. The continuation ratios between successive grades over all levels of the system underlie the distribution by grades completed, of course.

Among children who entered the school system in the early part of this century, continuation ratios between successively higher grades in the elementary system fell gradually from 98 to 89 per hundred. Only two-thirds of the children who completed the eighth grade effected the transition into the secondary system successfully, however. Of those who succeeded in the transition or completed the ninth grade, 86 per cent went on to complete the tenth grade. The transition thus constituted a major barrier or stringent screening point within the school system.

With the passing of time, the point at which a major barrier within

TABLE 8. PERCENTAGE OF AGGREGATE SCHOOLING RECEIVED BY THE
MOST-EDUCATED AND LEAST-EDUCATED MEMBERS OF COHORTS
AGE SIX BETWEEN 1906 AND 1935 BY REGION OF RESIDENCE
IN 1960 AND BY REGION OF BIRTH

Year cohort age six	South						Non-South					
	Most educated			Least educated			Most educated			Least educated		
	10%	20%	30%	30%	20%	10%	10%	20%	30%	30%	20%	10%
1906-1910	19.4	34.4	48.2	13.1	6.3	1.6	17.2	30.7	43.6	18.4	10.2	3.5
1911-1915	18.4	32.9	46.6	13.9	7.2	2.1	16.3	29.4	41.4	19.4	11.4	4.2
1916-1920	17.9	31.8	44.9	14.7	7.7	2.2	15.8	28.4	40.0	19.7	11.9	4.6
1921-1925	17.0	30.4	43.0	15.6	8.3	2.7	15.3	27.5	38.6	20.1	12.3	5.0
1926-1930	16.5	29.7	41.7	16.3	8.8	2.9	14.9	27.1	37.8	20.8	12.5	5.3
1931-1935	16.2	29.3	41.0	17.0	9.3	3.2	14.8	27.5	38.2	20.8	12.4	5.1
(by region of residence)												
1901-1910	19.1	34.4	47.1	14.4	6.7	2.5	16.2	29.6	41.8	19.6	11.5	5.0
1911-1920	17.6	31.7	44.9	16.1	8.9	2.9	15.6	28.5	39.9	20.2	12.6	5.3
1921-1930	16.4	29.7	42.1	16.8	9.8	3.1	14.8	27.0	37.7	21.9	13.1	5.8
1931-1935	15.9	29.0	40.8	17.8	10.1	3.9	14.5	26.8	37.8	22.2	13.7	5.8
(by region of birth)												

SOURCES: U.S. Census of Population: 1960, vol. I, part 1, Table 173, and Subject Report PC(2)-5B, Table 3.

the system is encountered has been deferred. Among children entering the school system around 1940, continuation ratios between successively higher grades in the elementary and secondary systems fell gradually from 99 to 90 per hundred. The rate of high-school graduation for this recent cohort, some 70 per cent, matches the elementary-completion rate for the cohort entering school three decades earlier.

It is now not until the point of transition from the secondary system into the institutions of higher education that the first major barrier to progression is encountered. For older cohorts, this point had constituted a second barrier. The continuation ratio between the twelfth and thirteenth grades also may be of interest because only at this point in the school system did the ratio become lower over time. Some 48 per cent of the relatively few high-school graduates in the cohort aged six in 1906-1910 completed at least one year of college as compared with 36 per cent of the more numerous high-school graduates in the cohorts aged six in 1921-1925 and 1926-1930. Although a final judgment is premature, the ratio may be found to have increased for members of more recent cohorts when their schooling is completed (Table 9).

Although members of the cohorts who entered school around 1940 were by 1960 beyond the "usual" age of college entry, a sizable number reported that they still were attending secondary school. Sizable numbers in more recent cohorts who had passed the "usual" age of high-school entry reported that they still were attending elementary school. The effect of such enrollment on the ultimate continuation ratios between higher levels of schooling is not clear. It remains to be seen whether late-completers will continue to progress through the system at the same rate as their age-mates who completed the grade at a younger age.

When continuation ratios for the Southern and non-Southern populations are examined, it becomes clear that convergence in the equality with which schooling is distributed has come about through a narrowing of the regional difference in selectivity below the secondary level. Children in the Southern system have been less likely to continue between successive grades through the elementary system than have their age-mates in the North and West. Continuation ratios between higher grades have been similar for Southerners and non-Southerners throughout the observation period, in contrast.

Regional Disparity. The stringent screening at the lower levels characteristic of the South results in a distinctive array by grades com-

TABLE 9. CONTINUATION RATIOS BETWEEN SPECIFIED GRADE LEVELS,
PER HUNDRED PERSONS COMPLETING LOWER LEVEL, FOR
AMERICANS ATTAINING THE AGE OF SIX BETWEEN 1906 AND 1948

Year cohort age six	Grade levels																
	0- 1	1- 3	3- 5	5- 7	7- 8	8- 9	9- 10	10- 11	11- 12	12- 13	13- 14	14- 15	15- 16	16- 17			
1906-1910	98	98	94	89	89	65	86	82	87	48	80	69	81	41			
1911-1915	98	98	95	91	91	72	87	83	87	46	80	71	81	43			
1916-1920	99	99	96	93	92	77	88	85	88	40	79	71	82	44			
1921-1925	99	99	97	94	94	83	90	87	88	36	79	72	83	42			
1926-1930	99	99	98	95	95	87	92	88	89	36	79	73	84	41			
1931-1935	99	99	98	96	96	89	91	88	89 ^a	38	81	76	83	38 ^a			
1936-1940	99	99	98	97	96	91	92	89	90 ^a	38	80 ^a	76 ^a	80 ^a	35 ^b			
1941	99	99	99	97	97	92	92	89	90 ^b	37 ^a	77 ^a	73 ^a	75 ^b	29 ^c			
1942	99	99	99	97	97	93	92	89	90 ^b	37 ^a	76 ^b	72 ^b	72 ^c	—			
1943	99	100	99	97	97	93	92	90	90 ^c	37 ^b	75 ^c	70 ^c	—	—			
1944	99	100	99	98	97	94	93	90	89 ^c	37 ^b	72 ^c	—	—	—			
1945	99	100	99	98	97	94	92 ^a	89 ^a	88 ^c	38 ^c	—	—	—	—			
1946	99	99	99	98	97	94	93 ^a	89 ^b	84 ^c	—	—	—	—	—			
1947	100	99	99	98	97 ^a	94 ^a	92 ^c	86 ^c	—	—	—	—	—	—			
1948	99	99	99	98	97 ^b	94 ^c	88 ^c	—	—	—	—	—	—	—			

^a 0.50 to 0.99 per cent of cohort enrolled in higher grade in 1960.

^b 1.00 to 1.49 per cent of cohort enrolled in higher grade in 1960.

^c 1.50 per cent or more of cohort enrolled in higher grade in 1960.

SOURCE: *U.S. Census of Population: 1960*, vol. I, part 1, Tables 168 and 173.

pleted. Its most noteworthy feature is described by the phrase "the too-empty middle of the southern educational pyramid."¹⁴ Moreover, this distributive feature of the Southern school system has supra-regional significance. Here the educational characteristics and sizes of the interregional migration streams become relevant.

Just under a fourth of the Southern-born residing in the nation in 1960 were living in the North or West, and about 6 per cent of the persons born in the North or West were living in the South. About one of every seven adults residing in the South in 1960 had been born outside the region, and about one of every six young adults and one of every four adults residing in the North and West had been born elsewhere. The interregional flows are, then, of substantial size relative to the size of either the originating or receiving population.

The stream moving north and west from the South includes disproportionate numbers of Southerners who have completed at least elementary school. In fact, it is precisely at grade eight that the relative number of out-migrants reaches its maximum. The stream moving into the South compensates only the loss of college-trained Southerners, however. The migration flows serve to accentuate the "too-empty middle" of the Southern distribution.

From the North and West, disproportionate numbers of college-trained natives move into the South; but their loss is roughly compensated by the in-movement of college-trained Southerners. Although the out-migration rates from the South peak at the "too-empty middle" of the Southern distribution, the relative number of Southern in-migrants in the North and West attains a maximum among functional illiterates, a stratum particularly ill-equipped to adjust to new circumstances (Table 10).

By one definition, "the first educational task, North or South, is to pull the bottom up toward the middle, to bring these men and women and their children into the orbit of the national culture and economy."¹⁵ The problems posed by this task are rather different in the respective regions, however.

For the North and West, the so-called bottom is weighted heavily with in-migrants from the South. Attempts to discourage the in-migration of the undereducated or to encourage adult in-migrants to acquire elementary training may not meet much success, but they appear possible lines of action for pulling the bottom up toward the middle.

At first thought, the Southern problem may seem to revolve wholly around the equality with which schooling is distributed. The least-educated three-tenths received only 18 per cent of the schooling

TABLE 10. INTERREGIONAL MIGRANTS PER 100 PERSONS REMAINING
IN THEIR REGION OF BIRTH IN 1960, BY GRADES COMPLETED,
FOR COHORTS ATTAINING THE AGE OF SIX
BETWEEN 1901 AND 1936

Region and year cohort age six	Grades completed										
	All	0	1-4	5-7	8	9-11	12	13-15	16	17+	
South											
1901-1910											
Out-migrants	27	17	22	25	37	28	29	26	24	28	
In-migrants	13	1	2	6	16	17	28	29	34	41	
1911-1920											
Out-migrants	29	15	20	25	41	32	30	30	24	29	
In-migrants	12	1	1	3	10	12	21	27	32	43	
1921-1930											
Out-migrants	32	16	19	26	44	37	33	38	28	37	
In-migrants	14	1	1	2	8	11	22	33	35	47	
1931-1936											
Out-migrants	31	16	20	25	44	37	30	31	26	35	
In-migrants	13	3	2	3	7	10	17	24	30	42	
Non-South											
1901-1910											
Out-migrants	6	5	5	4	4	6	8	9	11	12	
In-migrants	12	62	51	18	10	10	8	9	8	8	
1911-1920											
Out-migrants	5	4	5	3	3	5	6	8	11	11	
In-migrants	13	48	76	26	13	12	9	9	8	8	
1921-1930											
Out-migrants	6	3	6	4	3	4	6	10	12	12	
In-migrants	14	37	91	43	18	15	9	11	9	10	
1931-1936											
Out-migrants	6	4	6	5	3	5	5	8	10	11	
In-migrants	14	24	83	47	22	17	9	11	9	9	

SOURCE: U.S. Census of Population: 1960, Subject Report PC(2)-5B, Table 3.

available to natives of the South who reached the age of six in 1931–1936, resulting in an average of 6.0 grades completed. The corresponding figures for the non-South are 22 per cent of the schooling and an average of 8.6 grades completed. Had the least-educated three-tenths of the Southerners received 22 per cent of the available schooling, however, their average schooling still would have been only 7.5 grades. The mean number of grades completed was fewer for all Southerners than for their age-mates in the North and West. An attempt to trace the Southern “problem” back still further would lead to the earlier observation that the mean duration of schooling is lower in the South despite the higher per capita output of schooling.

The measures of the educational distribution necessarily reflect the experience of persons whose schooling was essentially complete at the time of the most recent census, the youngest of whom now are nearly forty years old. There is, however, no basis for thinking that the outlines of the regional disparity have changed. At the time of the 1960 census, literal high-school dropouts were no more numerous among teen-agers in the Southern population than in the rest of the national population; but the proportion of out-of-school youth with no more than elementary training was substantially higher in the South. Moreover, among the youth still attending school, relatively many Southerners had completed no more than seven grades and represented potential increments to the out-of-school group with only elementary training (Table 11).

The Timing of Schooling

The chances that an individual will be attending school depend more upon his age than upon any other personal characteristic, save perhaps the presence of severe mental or physical impairment. Throughout this century, the age-specific enrollment curve for Americans has taken the form of an inverted-U with its apex at age eleven. Among the very young and the very old, the school-attendance rate has been and is effectively zero. At more central ages, increases in attendance have been recorded. Because the increases over time in attendance rates form a U when plotted in relation to age, the enrollment curves for successively younger cohorts become less peaked. Near-universal attendance has diffused from age eleven toward both younger and older ages during the past six decades.

Because attendance has diffused toward both younger and older ages over time, intercohort differences in per capita school years attended widen with advances in age. Contrast, for example, the co-

TABLE 11. DISTRIBUTION PER 1,000 YOUTH BY ENROLLMENT STATUS
AND GRADES COMPLETED, FOR COHORTS AGE SIX
BETWEEN 1948 AND 1951 BY REGION OF RESIDENCE IN 1960

Year cohort age six and region	Not enrolled, by grades completed					Enrolled, by grades completed						
	12+	9-11	8	5-7	0-4	0-4	5-7	8	9-11	12+		
1948-1949												
South	21	100	45	55	16	13	56	69	618	7		
Non-South	31	90	25	13	7	9	19	40	754	13		
1950-1951												
South	1	19	18	29	15	29	341	327	220	0		
Non-South	1	18	14	8	6	10	231	403	307	0		

SOURCE: U.S. Census of Population: 1960, Subject Report PC(2)-5A, Table 12.

hort of males who entered the school system around 1950 with the cohort who had entered around 1910. The mean number of school years attended by the more recent cohort exceeded the mean for the earlier cohort by 0.6 years at age eight; by 1.3 years at age sixteen; and by 2.6 years at age twenty. In fact, members of the more recent cohort had received as much schooling by the time they were sixteen as the members of the earlier cohort had received by the time they were twenty (Table 12).

More generally, the intercohort comparisons raise the issue of the timing of schooling within the life cycle. Many different schedules of age-specific attendance rates imply the same mean duration of schooling for the cohort as its members reach adulthood. From another perspective, identical age-specific attendance rates over a part of the age range do not ensure the same ultimate mean duration of schooling. Not only are these observations true in some formal sense; differences in the timing of schooling among cohorts of Americans are pronounced enough to render difficult any inference about the magnitude of the ultimate differential in schooling.

Differentials by Color. Assume, for example, the task of gauging the progress of nonwhite boys who reached the age of six in 1950 with respect to formal schooling. Plausible norms of comparison might be the progress of their white age-mates, of white boys born a decade earlier, and nonwhite boys in that earlier birth cohort (Table 13). Annual reports issued as the nonwhite boys progressed would almost certainly appear to contradict one another.

1. Reports on attendance at ages five and six and at ages eighteen and nineteen will point out that the nonwhite boys are attending in relatively greater numbers than had the white boys ten years their senior, but reports on attendance at ages seven through seventeen will assert that they are attending in relatively lesser numbers than had the white boys ten years their senior.
2. The report issued when the nonwhite boys are six will note that the gap with their white age-mates is less than the gain recorded over the earlier nonwhite cohort, but the report issued when they are fifteen will note that the gap with white age-mates is greater than the gain over the earlier nonwhite cohort.
3. When the nonwhite boys reach the age of seventeen, the point will be made that they have attended school a half year less than their white age-mates and a half year more than the nonwhite boys ten years their senior; but when they reach the age of

TABLE 12. AGE-SPECIFIC RATES OF SCHOOL ATTENDANCE AND
PER CAPITA SCHOOL YEARS ATTENDED BY AGE, FOR COHORTS
OF AMERICAN MALES AGE SIX IN GIVEN YEAR

Age	Attendance rate per 1,000					Per capita school years attended				
	1910	1920	1930	1940	1950	1910	1920	1930	1940	1950
5	167	180	195	175	339	—	—	—	—	—
6	517	544	655	682	764	0.2	0.2	0.2	0.2	0.3
7	747	799	890	922	942	0.7	0.7	0.9	0.9	1.1
8	825	874	940	947	956	1.4	1.5	1.7	1.8	2.0
9	861	896	954	955	960	2.3	2.4	2.7	2.7	3.0
10	910	947	962	958	968	3.1	3.3	3.6	3.7	4.0
11	924	956	966	960	969	4.0	4.2	4.6	4.6	4.9
12	911	950	961	954	965	5.0	5.2	5.6	5.6	5.9
13	906	947	955	952	963	5.9	6.1	6.5	6.6	6.9
14	846	907	926	934	950	6.8	7.1	7.5	7.5	7.8
15	771	848	873	915	931	7.6	8.0	8.4	8.4	8.8
16	533	658	757	806	865	8.4	8.8	9.3	9.4	9.7
17	357	471	605	679	763	8.9	9.5	10.0	10.2	10.6
18	228	311	381	424	548	9.3	10.0	10.6	10.8	11.3
19	154	208	232	278	375	9.5	10.3	11.0	11.3	11.9
20	—	—	—	—	—	9.7	10.5	11.3	11.5	12.3

SOURCE: Duncan, Beverly, *Family Factors and School Dropout*, Final Report on Cooperative Research Project No. 2258, U.S. Office of Education, The University of Michigan, Ann Arbor, 1965, Table 6-1.

TABLE 13. AGE-SPECIFIC RATES OF SCHOOL ATTENDANCE
FOR COHORTS OF AMERICAN MALES AGED SIX IN
1950 AND 1940, BY COLOR

Age	Male				Nonwhite, 1950, less		
	White		Nonwhite		White	Nonwhite	
	1950	1940	1950	1940	1950	1940	1940
(attendance rate per 1,000)							
5	351	184	248	117	-103	64	131
6	772	696	702	588	- 70	6	114
7	947	931	907	854	- 40	-24	53
8	959	953	935	903	- 24	-18	32
9	963	959	945	922	- 18	-14	23
10	970	960	953	932	- 17	- 7	21
11	972	962	953	936	- 19	- 9	17
12	968	958	949	928	- 19	- 9	21
13	966	956	941	914	- 25	-15	27
14	954	941	916	880	- 38	-25	36
15	938	923	884	857	- 54	-39	27
16	874	818	800	722	- 74	-18	78
17	775	696	671	550	-104	-25	121
18	556	437	485	324	- 71	48	161
19	384	287	309	201	- 75	22	108
(per capita school years attended)							
6	0.4	0.2	0.2	0.1	- 0.2	0.0	0.1
7	1.1	0.9	1.0	0.7	- 0.1	0.1	0.3
8	2.1	1.8	1.9	1.6	- 0.2	0.1	0.3
9	3.0	2.8	2.8	2.5	- 0.2	0.0	0.3
10	4.0	3.7	3.7	3.4	- 0.3	0.0	0.3
11	5.0	4.7	4.7	4.3	- 0.3	0.0	0.4
12	5.9	5.6	5.6	5.3	- 0.3	0.0	0.3
13	6.9	6.6	6.6	6.2	- 0.3	0.0	0.4
14	7.9	7.6	7.5	7.1	- 0.4	- 0.1	0.4
15	8.8	8.5	8.4	8.0	- 0.4	- 0.1	0.4
16	9.8	9.4	9.3	8.8	- 0.5	- 0.1	0.5
17	10.6	10.2	10.1	9.6	- 0.5	- 0.1	0.5
18	11.4	10.9	10.8	10.1	- 0.6	- 0.1	0.7
19	12.0	11.4	11.3	10.4	- 0.7	- 0.1	0.9
20	12.3	11.7	11.6	10.6	- 0.7	- 0.1	1.0

SOURCE: *Census of Population: 1950*, vol. II, part 1, Table 110.

twenty, the point will be made that they lag behind their white age-mates by less than a year, whereas a gain of a full year is registered over the nonwhites ten years their senior.

Any recurring theme will be limited mainly to the observation that nonwhite boys are attending in relatively lesser numbers than are their white age-mates, but in relatively greater numbers than had the non-white boys ten years their senior.

Differentials by Locality. There are, moreover, somewhat persistent differentials in timing among localities. Precise measurement of these differentials would require age-specific enrollment schedules for cohort members whose schooling occurred wholly within the locality. The closest approximation is a schedule for cohort members resident in the locality on a given observation date, a changing rather than fixed group of persons born in the same year. Nonetheless, the outlines of the distinctive regional patterns can be sketched. The Northern pattern, exemplified by Massachusetts, is distinguished by: a relatively young school-entry age; a relatively high rate of attendance in the ages of maximum attendance; and a relatively early age of school leaving. The key features of the Western pattern, exemplified by Utah, are: a relatively late school-entry age; a relatively high rate of attendance in the ages of maximum attendance; and a relatively late age of school leaving. The Southern pattern, exemplified by Texas, is distinguished by: a relatively late school-entry age; a relatively low rate of attendance in the ages of maximum attendance; and a relatively early school leaving age. Such differentials imply that the school-age migrant is likely to be defined as retarded or accelerated by the norm of the receiving locality (Table 14).

Differentials by Social Background. The timing of schooling probably varies among age-mates who differ with respect to social background. Such differentials are much more difficult to document, but at least three pieces of relevant evidence are available.

First, the age of school entry can be shown to be younger for children whose parents are well educated than for children whose parents have a lesser educational attainment. Among children whose father (or mother in the absence of the father) had not completed elementary school, 31 per cent of the five-year-olds and 51 per cent of the six-year-olds were attending school in 1960. The corresponding figures for children whose father was a high-school graduate were 73 and 88 per cent. A lesser differential in the same direction appears at ages seven through thirteen. If the attendance rates for the five-year-olds in each background stratum at successively higher ages were the same as those observed for children of the given age and in the same stratum in 1960, the mean duration of schooling by age fourteen would be 7.8 years if the father had not completed elementary school as compared with 8.3 years if the father was a high-school graduate.¹⁶

Second, among children who would have been fourteen years old at the opening of the 1959-1960 school year, the mean number of

TABLE 14. AGE-SPECIFIC RATES OF SCHOOL ATTENDANCE FOR
URBAN RESIDENTS IN THE STATES OF MASSACHUSETTS, UTAH,
AND TEXAS IN THE 1950'S AND 1940'S

Age	1950			1940			Mass., 1950's, less			Mass., 1940's, less		
	Mass.	Utah	Texas	Mass.	Utah	Texas	Utah	Texas	Utah	Texas	Utah	Texas
	(attendance rate per 1,000)											
5	508	327	155	334	186	49	181	353	148	285		
6	885	804	550	865	737	481	81	335	128	384		
7	948	972	921	968	967	902	-24	27	1	66		
8	956	977	949	975	984	952	-21	7	-9	23		
9	956	977	959	978	983	965	-21	-3	-5	13		
10	968	981	968	969	980	963	-13	0	-11	6		
11	969	982	970	971	979	966	-13	-1	-8	5		
12	966	981	964	969	982	960	-15	2	-13	9		
13	962	979	958	968	979	951	-17	4	-11	17		
14	958	974	938	964	979	925	-16	20	-15	39		
15	942	961	899	947	975	870	-19	43	-28	77		
16	862	915	818	847	931	755	-53	44	-84	92		
17	748	839	692	731	835	593	-91	56	-104	138		
18	571	656	498	473	536	360	-85	73	-63	113		
19	444	508	352	343	396	260	-64	92	-53	83		
	(per capita school years attended)											
14	8.1	8.0	7.4	8.0	7.8	7.2	0.1	0.7	0.2	0.8		
16	10.0	9.9	9.2	9.9	9.7	9.0	0.1	0.8	0.2	0.9		
18	11.6	11.7	10.7	11.5	11.5	10.3	-0.1	0.9	0.0	1.2		
20	12.6	12.8	11.6	12.3	12.4	11.0	-0.3	1.0	-0.1	1.3		

SOURCE: U.S. Census of Population: 1960, Reports by States, vol. I, Table 45; U.S. Census of Population: 1950, Reports by States, vol. II, Table 62; U.S. Census of Population: 1940, Reports by States, vol. IV, Table 15.

TABLE 15. SCHOOLING OF AMERICANS AGED 14 AT THE OPENING OF THE 1959-1960 SCHOOL YEAR, BY EDUCATION OF THEIR FAMILY HEADS

<i>Grades completed by family head</i>	<i>Enrolled per 1,000</i>	<i>Mean grades completed</i>	<i>Percentage completing at least grade</i>			
			<i>5</i>	<i>7</i>	<i>8</i>	<i>9</i>
7 or less	918	7.3	95.4	78.7	58.1	16.5
8	946	7.7	97.6	90.6	73.2	20.0
9 to 11	955	7.8	98.3	91.1	75.9	23.3
12	981	8.0	98.1	95.4	86.1	24.4
13 or more	982	8.1	99.6	98.4	90.6	28.6

SOURCE: Special tabulations from a computer tape file furnished under a joint project sponsored by the U.S. Bureau of the Census and the Population Council and containing selected 1960 census information from a .001 sample of the population of the United States.

grades completed was 7.3 if the father had not completed elementary school and 8.0 if he was a high-school graduate (Table 15). The order of magnitude of the differential is similar to that implied by the enrollment schedules at ages younger than fourteen recorded in the 1960 census and referred to earlier. The major factor producing the differential may be presumed to be a difference in the usual age of school entry, rather than a difference in enrollment rates at ages seven through thirteen or in the relative frequency with which a grade is repeated.

The third piece of evidence pertains to the timing of attendance after entering college. The college careers of a group of 1952 male entrants were traced over a ten-year period. Entrants whose parents were well educated were less likely to interrupt their schooling after college entry. They were also less likely to interrupt their schooling temporarily. Among the men who had completed college in the ten-year period, interruption had been as common among the men with well-educated parents as among the other entrants, however.¹⁷ The relevant data are summarized below in the form of percentage distributions for males in each background stratum.

Closely spaced readings on the influence of social background on the

<i>Interruption of schooling</i>	<i>Parents' education</i>		
	<i>High</i>	<i>Mid</i>	<i>Low</i>
None	53.6	49.5	45.5
Temporary	29.0	25.1	23.8
Permanent	17.4	25.4	30.7

timing of schooling in the life cycle will not be easy to effect from the results of "general-purpose" surveys. Measurement may appear to require only that information be collected about each member of each household contacted, including indicators of schooling for the young and socioeconomic position for the household or its head. Two distinct sets of problems arise, however. First, social background can itself change as the child matures. Family heads obtain more schooling; main wage-earners change jobs; secondary family workers begin to augment the family income; or, for that matter, family units dissolve and reform. Second, upon leaving school or entering college, sizable numbers of children terminate residence in the family home. They do not, then, appear on the household roster; and their characteristics can no longer be linked to those of other family members. For example, about a third of the young males who are eighteen years old at the opening of the school year are not living in a family unit.¹⁸

If there is a serious interest in measuring the influence of social background on schooling as that schooling is occurring and not after the fact, large-scale special surveys must be fielded periodically. The design would call for a baseline survey of "preschool" children in which the composition and socioeconomic position of their families were ascertained. One of two strategies then must be followed. The children covered in the baseline survey can be traced forward. Information about their schooling and the composition and socioeconomic position of their families would be collected at each subsequent contact. Alternatively, subsequent surveys of the birth cohort in which the "preschool" children of the baseline survey hold membership could obtain some retrospective information as well as current information about schooling and family circumstances. Such retrospective information, if used judiciously, should permit a splicing between surveys, such that the series would approximate a set of repeated observations on the same group of children.

Intervention in the Distributive Process

How the school system should distribute education depends on the kind of society Americans envisage at the close of this century. If, for example, it is one in which individuals are valued not for the mechanical energy they can provide, but rather for their ability to manipulate symbols, then the functional illiterate can play no productive role. If it is a society in which the right to migrate is inviolable,

then both the output of schooling and its distribution within each locality are truly national concerns. Whatever the vision of the society to come, it may not be amiss to question the implication of each policy proposal for the shape of the education distribution, under conditions of both a fixed and changing output of schooling.

An active role on the part of the federal government would represent something of a break with tradition. Education has been conceived as a state, if not local, responsibility. Insofar as federal action has occurred in the past, it typically has been directed to the most-educated segment of the population nearing adulthood.

For example, just over a hundred years ago Congress acted to, in effect, set up a permanent endowment for each state in support of a college. At the time that the "land-grant" colleges were endowed, the youngsters they would serve were, indeed, an educational elite. Fewer than half the children between the ages of five and twenty were attending school. A sixth of the teen-agers were illiterate.

Two decades ago, education allowances were made available to veterans of World War II. They had been a somewhat select group at the time of induction. A 1947 survey revealed that 78 per cent of the veterans aged twenty-five to twenty-nine as compared with 59 per cent of their nonveteran age-mates had completed some high-school training.¹⁹ A resurvey of the cohort in 1952 revealed no change in the respective proportions with some high-school training. Neither was change in the continuation ratios between higher levels of schooling observed among the nonveterans. Among the veterans, however, continuation ratios had risen from 67 to 74 per hundred between grades nine and twelve; from 31 to 36 per hundred between grades twelve and thirteen; and from 33 to 51 per hundred between grades thirteen and sixteen.²⁰

Programs such as "Head Start" and "Job Corps" may signal a new direction in federal activity in the educational sphere. Whether they will have a detectable influence on the education distribution remains to be seen, of course. It is not only that these programs are of very recent origin. Thus far, analysts of education statistics have met with little success in identifying a change in the distribution which can unambiguously be designated as an effect of a program as such. To be sure, substantial numbers of veterans resumed schooling with an education allowance; but a substantial number of these men whose schooling had been interrupted by military service would have resumed schooling in the absence of such an allowance.

DIFFERENTIAL SCHOOLING AMONG SUBPOPULATIONS

What are commonly referred to as the inequalities in the American educational system frequently are inferred from more or less persistent differences in the mean years of formal schooling received by the young in diverse subpopulations. If it were possible to obtain an unambiguous measure of how educable a child is, the inequalities might be conceived as the differences among subpopulations with respect to the mean amount of schooling received by children with the same ability to learn. Inasmuch as this measurement problem remains unresolved, the gross differences must be taken to represent the inequality or, perhaps more accurately, inequity with which the system operates.

Compounded in a gross difference between groups are differences in their access to educational opportunity; in the extent to which they capitalize on available opportunities; in their exposure to out-of-school experiences which facilitate progress in the school system; and in the frequency and severity of impairments, of whatever origin, in the ability to learn. How much of an intergroup difference in educational attainment should be attributed to inequities in the operation of the school system depends on one's conception of the role of the school in American society. The provision of adequate school facilities within the effective commuting range of each child is one order of task. Compensation for intergroup differences in resources and motivation or health and housing is quite another order.

One other point should be made clear at the outset. The annual per capita amount of schooling received by a subpopulation does not alone determine the mean duration of schooling for its members; the age structure of the subpopulation intervenes. Since the 1930's, for example, the amount of schooling received by members of America's racial minorities appears to have exceeded the amount received by members of the so-called white majority on a per capita basis. The differential is unequivocal each year since the close of World War II (Table 16). Given the age compositions of the respective populations as of 1960, however, the per capita amount of schooling received by the minorities would have to be about .04 school years greater than the per capita amount received by the majority if the mean schooling received by the young in the two populations were to be equalized at about twelve years. The foregoing calculation is exceedingly rough, but it illustrates the point that equality in the mean duration of schooling between subpopulations is likely to entail inequality in the

TABLE 16. PER CAPITA SCHOOL YEARS RECEIVED BY MEMBERS OF THE WHITE AND NONWHITE POPULATIONS, 1900-1964

<i>Year</i>	<i>White</i>	<i>Nonwhite</i>	<i>Year</i>	<i>White</i>	<i>Nonwhite</i>
1900	.183	.124	1953	.203	.223
1910	.199	.170	1954	.220	.240
1920	.207	.196	1955	.231	.252
1930	.224	.211	1956	.231	.258
1940	.201	.212	1957	.237	.268
			1958	.243	.273
1947	.179	.206	1959	.247	.280
1948	.195	.206	1960	.252	.286
1949	.198	.212	1961	.255	.293
1950	.198	.225	1962	.258	.286
1951	.200	.233	1963	.262	.295
1952	.208	.237	1964	.265	.300

SOURCE: 1900 through 1940 from reports of the decennial censuses; 1947 through 1964 from reports of the Current Population Survey conducted by the U.S. Bureau of the Census.

per capita amounts of schooling received by the respective subpopulations.

Trends in the differential schooling of several subpopulations are assessed below. The data are drawn exclusively from surveys conducted by the U.S. Bureau of the Census, and the measure of schooling is the number of grades completed. Most of the statistical series reported are terminated with the birth cohort which entered the school system shortly before World War II although the same items of information often are available for more recent birth cohorts. Readings based on the experience of a cohort which includes an appreciable number of members whose schooling still is in progress cannot be interpreted readily within a trend framework and, therefore, are not reported here.

Sex

As indexed by mean grades completed, the differential in schooling by sex has been modest in magnitude throughout this century; but the direction of the differential has reversed over time. The initial difference of 0.3 grades in favor of females decreased for successive cohorts reaching school age before the 1920's. A difference in favor of males, which then appeared, had increased to 0.4 grades for the cohort reaching school age in the late 1930's. The increasingly favorable position of males with respect to educational attainment also

is revealed by a narrowing of the male deficit of elementary and secondary graduates and a widening of the male excess of college graduates (Table 17).

Continuation between successive grade levels in the elementary system and at the point of transition into the secondary system has remained relatively more frequent for females than for males, although the trend toward convergence in the respective continuation ratios is clear. Within the secondary level, the continuation ratios have typically, but by no means consistently, been higher for females than for males. Possibly a reversal in the direction of the sex differential with respect to continuation between these grade levels will be confirmed when the series can be extended forward in time. Continuation at the point of transition from the secondary system into the institutions of higher education and between successive levels in the colleges and universities has consistently been more frequent for males than for females, and the sex difference has tended to widen over time (Table 18).

Comparisons with respect to educational attainment between males and their female age-mates have a special property which will be absent in comparisons between most other subpopulations. The sex ratio at birth and in childhood is essentially invariant among families of high and low social status, urban and rural families, families with few and many children, minority-group and majority-group families. Differences in the composition of the male and female subpopulations with respect to such background characteristics or in their educational opportunities, at least in the sense of presence of school facilities, cannot be the source of the sex differential in schooling. This is not to say that the sex differential in schooling cannot vary among social-origin strata, of course.

A very few comparisons can be made between males and their female age-mates in the same social-origin stratum. The data for males derive from their reports in the March, 1962, Current Population Survey and its supplement, "Occupational Changes in a Generation." The data for females are based on the reports made by married men included in the survey about their wives.²¹ Each survey respondent was asked the number of grades he had completed, the number of brothers and sisters he had had, and what kind of job had been held by the head of the family in which he was living at age sixteen. If the respondent was married, he was asked to report the same items of information for his wife.

The study design and the specification of tabulations now available result in some slippage in the comparisons between the schooling of

TABLE 17. MEASURES OF SCHOOLING RECEIVED FOR
COHORTS AGE SIX BETWEEN 1906 AND 1945, BY SEX

Year cohort age six	Percentage completing									
	Mean grades completed		Grade 16		Grade 12		Grade 8			
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1906-1910	8.8	9.1	7.0	5.4	26.1	30.7	68.1	72.7		
1911-1915	9.4	9.7	8.2	6.5	32.6	37.2	74.2	78.3		
1916-1920	9.9	10.1	8.6	6.2	38.9	42.3	78.3	82.0		
1921-1925	10.5	10.5	10.0	6.2	47.1	49.7	83.1	86.0		
1926-1930	10.9	10.8	13.0	6.2	52.8	56.5	85.7	88.5		
1931-1935	11.1	11.0	14.7	7.3	53.4	58.0	86.9	90.1		
1936-1940 ^a	11.8	11.4	18.5	9.3	66.5	64.8	90.0	92.6		
1941-1945 ^a	— ^b	— ^b	— ^b	— ^b	70.5	70.1	93.2	94.9		

^a Educational attainment for the two most recent cohorts probably is overstated relative to attainment for earlier cohorts because of differences in the source survey operations.

^b Ultimate attainment cannot yet be evaluated.

SOURCE: *U.S. Census of Population: 1960*, vol. I, part 1, Table 173 for cohorts 1906-1935; *Current Population Reports*, Series P-20, No. 158, December, 1966, Table 4 for cohorts 1936-1945.

TABLE 18. CONTINUATION RATIO BETWEEN SUCCESSIVE GRADES PER 1,000 COMPLETING LOWER GRADE FOR COHORTS AGE SIX BETWEEN 1906 AND 1944, BY SEX

Year cohort age six, and sex	Grades															
	0- 1	1- 3	3- 5	5- 7	7- 8	8- 9	9- 10	10- 11	11- 12	12- 13	13- 14	14- 15	15- 16	16- 17		
1906-1910																
Male	974	976	930	880	876	631	855	820	866	526	824	732	842	468		
Female	977	983	944	893	897	672	866	827	877	452	774	646	776	349		
1911-1915																
Male	982	981	947	905	898	708	868	828	862	490	823	738	844	492		
Female	986	988	960	916	914	737	878	834	878	428	783	678	767	349		
1916-1920																
Male	987	984	957	921	914	762	883	847	871	434	818	734	849	503		
Female	990	990	970	931	926	782	886	845	882	360	769	682	772	345		
1921-1925																
Male	990	987	966	940	936	825	901	867	880	410	822	734	856	486		
Female	992	992	976	948	944	836	901	865	886	310	751	683	785	314		
1926-1930																
Male	991	989	972	948	948	864	912	878	890	438	836	769	876	470		
Female	993	993	980	957	956	882	918	882	894	291	729	669	778	288		
1931-1935																
Male	992	991	976	954	950	875	902	872	892	475	845	792	865 ^a	447 ^b		
Female	994	994	984	963	961	901	915	878	889 ^a	306	754	701	775	251		
1936-1940																
Male	992	992	981	962	960	901	918	896	903 ^b	459 ^a	825 ^a	782 ^b	819 ^c	421 ^c		
Female	994	995	988	971	968	920	920	886	895 ^a	307	756	715	760	213		
1942																
Male	991	993	984	967	964	917	919	898	848 ^c	426 ^b	770 ^c	733 ^c	732 ^c	308 ^c		
Female	995	996	991	977	975	935	925	891	899	321	749	711	714 ^a	128 ^a		
1944																
Male	994	995	988	973	970	928	922	897 ^a	886 ^c	416 ^c	722 ^c	531 ^c	168 ^a	167 ^a		
Female	995	997	992	982	978	944	930	896	890 ^c	334 ^a	727 ^b	571 ^c	211 ^c	76		

^a 0.50 to 0.99 per cent of cohort enrolled in higher grades in 1960.

^b 1.00 to 1.49 per cent of cohort enrolled in higher grade in 1960.

^c 1.50 or more per cent of cohort enrolled in higher grade in 1960.

SOURCE: *U.S. Census of Population: 1960*, vol. I, part 1, Tables 168 and 173.

males and the schooling of their female age-mates in the same social-origin stratum that can be reported here (Table 19). The match is close enough to make the comparisons substantively interesting, however. Equally important, the comparisons illustrate the feasibility of reconstructing past differentials in schooling from the retrospective reports of persons still living. The possibility that the school experience of the cohort will not be reflected faithfully in the retrospective reports of survivors increases as the cohort ages. Evaluations of data quality undertaken as part of the original study suggest that these data are adequate for the purpose to which they are put here, however.

The increasingly favorable position of males vis-à-vis females with respect to educational attainment is a noteworthy trend not only for the American population as a whole, but also for the subgroups examined here—persons reared in small families, in large families, in nonfarm families, and in farm families. The direction of the sex differential at the first observation, the cohort reaching school age between 1906 and 1920, was not constant over subgroups or origin strata, however. The mean grades completed by males with no more than three siblings or by males living in a family headed by a nonfarm worker was slightly greater than the mean attainment of their female age-mates in the same origin stratum. The disparity in attainment by sex has become greater for more recent cohorts. In contrast, males reared in large families or in farm families were completing substantially fewer grades than their female age-mates in the same origin stratum at the initial observation. The difference in attainment by sex for these groups has become less for the cohorts reaching school age in the 1920's and the 1930's.

In each stratum, a differential favoring females is detectable with respect to continuation through the elementary and secondary systems. At higher levels of education, the continuation ratios are higher for males than for females, however. Although the direction of these differentials is constant over origin strata, the magnitude is variable. The differential favoring females at the lower levels of schooling is less pronounced for cohort members from small or nonfarm families than for cohort members from large or farm families. The differential favoring males at the higher levels of schooling, on the other hand, is more pronounced for the cohort members from small or nonfarm families.

Two pieces of evidence can be offered to support the contention that past differentials can be inferred from retrospective reports of cohort survivors. The first is an estimate of mean school years at-

TABLE 19. MEASURES OF SCHOOLING RECEIVED FOR COHORTS AGE SIX BETWEEN 1906 AND 1940, BY SEX AND NUMBER OF SIBLINGS OR OCCUPATION OF FAMILY HEAD

Origin stratum, year cohort age six and sex	Mean grades completed	Percentage completing grade			Continuation ratio between grades per 1,000 completing lower grade						
		8	12	16	0-5	5-8	8-9	9-12	12-13	13-16	
<i>Three or fewer siblings</i>											
1906-1920											
Male	11.1	87.1	53.1	14.8	955	912	838	727	507	551	
Female*	11.0	89.2	55.8	10.0	965	925	829	754	445	404	
1921-1930											
Male	12.0	91.5	68.0	20.8	973	941	913	814	501	610	
Female*	11.8	95.8	71.4	10.0	989	969	915	814	336	417	
1931-1940											
Male	12.6	94.8	74.3	24.7	984	963	950	826	520	639	
Female	12.1	96.6	76.5	12.7	988	978	964	821	359	462	
<i>Four or more siblings</i>											
1906-1920											
Male	8.9	70.6	27.8	5.5	882	801	661	595	376	532	
Female*	9.5	78.6	35.4	4.2	948	829	709	635	297	398	
1921-30											
Male	9.9	80.9	41.5	5.3	928	872	799	641	314	407	
Female*	10.4	87.5	49.3	4.0	964	908	817	689	226	356	
1931-1940											
Male	10.6	86.2	48.8	8.3	955	903	858	659	360	475	
Female	10.8	91.5	54.1	4.7	981	933	862	686	234	373	

tended by members of a cohort who entered school around 1930. Cumulating school-attendance rates by single year of age and sex as reported in the 1930 census through age thirteen and as reported in the 1940 census from ages fourteen through twenty-four for the non-farm population yields means of 12.2 school years attended for males and 11.8 school years attended for females. Cumulation of the corresponding school-attendance rates for the farm population yields means of 10.3 years for males and 10.6 years for females. The estimates compare quite satisfactorily with the measures of mean grades completed by the cohort reaching school age in the 1930's which were derived from the retrospective reports of survivors (reported in Table 19).

The second, and substantively more interesting, piece of evidence is the sex differential in attainment for sixteen-year-olds living in non-farm and farm families, respectively, at the time of the 1960 census (Table 20). By this age, 93.6 per cent of the nonfarm males had com-

TABLE 20. PERCENTAGE DISTRIBUTION BY ENROLLMENT STATUS AND GRADES COMPLETED, FOR PERSONS AGE 16 AT OPENING OF 1959-1960 SCHOOL YEAR BY SEX AND FAMILY HEAD'S OCCUPATION

<i>Stratum of origin and sex</i>	<i>Not enrolled by grades completed</i>					<i>Enrolled by grades completed</i>				
	0-6	7	8	9-10	11+	0-6	7	8	9-10	11+
<i>Nonfarm family head</i>										
Male	1.5	1.3	2.9	5.3	3.4	2.0	1.5	4.4	59.6	18.0
Female	1.1	0.9	2.0	5.2	3.2	1.5	1.5	2.6	60.0	22.0
<i>Farm family head</i>										
Male	5.5	7.6	5.5	6.2	2.1	5.5	4.1	4.8	47.6	11.0
Female	2.5	2.5	5.0	3.3	3.3	1.7	1.7	4.1	56.2	19.8

SOURCE: Special tabulations based on .001 sample of records from the 1960 Census of Population.

pleted the eighth grade and 3.5 per cent continued to attend elementary school. The corresponding proportions for nonfarm females were 95.0 and 3.0 per cent. The percentage of elementary graduates probably will be something less than one point higher for females than for males when all schooling is completed. The excess of female elementary graduates has been reported as 0.7, 3.1, and 3.3 percentage points for nonfarm-reared members of successively older cohorts. Of the male sixteen-year-olds living in farm families, 77.2 per cent had

completed eighth grade and 9.6 per cent continued to attend elementary school. The corresponding proportions for females were 91.7 and 3.4. If the youngsters attending elementary school ultimately complete eighth grade, the percentage of elementary graduates will be 8.3 points higher for females than for males. The excess of female elementary graduates has been reported as 7.2, 10.2, and 8.4 percentage points for farm-reared members of successively older cohorts.

Family Size

Not only does the direction of the sex differential in schooling differ between cohort members who grew up in small families and their age-mates who grew up in large families; family size itself has a very substantial influence on the amount of schooling received for both males and females. The number of grades completed is related negatively to the number of siblings. The female with no more than one sibling completes an average of two grades more than the female with at least seven siblings (Table 21). The effect of family size on schooling is even more pronounced for males. The male with no more than one sibling completes an average of three grades more than the male with at least seven siblings (Table 22). Increases in mean schooling between members of the cohort reaching school age in 1906-1920 and the cohort reaching school age in 1931-1940 amounted to about a grade for females in each family-size stratum and a grade and a half for males in each stratum.

Although the sample of respondents who provided the information summarized here was large by usual standards, it is not sufficiently large to subclassify respondents into both detailed birth cohorts and detailed origin strata and, then, to measure the educational attainment of each subclass. In an earlier report on these data, it was assumed that the relation of the number of grades completed to the number of siblings could be described adequately with linear regression techniques. This assumption permitted a finer subclassification by birth cohort, although it ruled out the possibility of exploring potentially interesting details of the educational distribution of youth in a particular origin stratum. Results of the regression analyses suggested that the family-size effect had been essentially constant for some decades. The regression coefficient measuring the change in mean grades completed associated with an increase of one in the number of siblings fluctuated only between $-.32$ and $-.42$ for seven successive birth cohorts of native white males reaching the age of six between 1906-1910 and 1936-1940.²²

TABLE 21. MEASURES OF SCHOOLING RECEIVED BY FEMALES
AGE SIX BETWEEN 1906 AND 1940, BY NUMBER OF SIBLINGS

Year cohort age six and number of siblings ^a	Per- centage distri- bution	Mean grades com- pleted	Percentage completing grade			Continuation ratio between grades per 1,000 completing lower grade						
			8	12	16	0-5	5-8	8-9	9-12	12-13	13-16	
1906-1920 ^a												
0	5.5	11.4	86.4	59.2	13.2	979	883	871	786	592	— ^b	
1	9.8	11.4	91.1	63.4	11.4	968	942	865	805	445	402	
2	13.4	11.0	90.6	55.0	10.6	966	938	808	751	452	425	
3	12.9	10.5	87.6	49.3	7.1	956	917	807	697	361	— ^b	
4	11.1	10.2	86.1	42.1	5.0	975	883	749	652	329	— ^b	
5 or 6	20.5	9.7	79.9	38.2	4.3	954	838	720	664	292	— ^b	
7 or more	26.7	9.1	74.3	30.4	3.7	931	798	681	600	283	— ^b	
1921-1930 ^a												
0	7.3	11.9	96.3	74.5	11.1	986	977	929	832	371	— ^b	
1	13.0	12.4	97.5	79.7	14.4	994	981	954	856	405	447	
2	15.9	11.5	95.1	66.5	8.1	990	960	880	795	300	404	
3	13.3	11.4	94.7	67.3	7.4	983	963	910	781	275	— ^b	
4	12.1	10.9	92.1	59.2	5.3	986	933	843	764	247	— ^b	
5 or 6	16.7	10.4	87.3	50.1	3.5	963	906	856	671	208	— ^b	
7 or more	21.6	10.0	85.3	43.0	3.6	953	895	770	655	226	— ^b	
1931-1940												
0	7.9	12.5	97.3	79.7	19.4	992	980	969	845	450	542	
1	17.9	12.4	98.0	81.5	15.2	991	989	975	854	388	480	
2	16.3	11.9	95.8	73.3	11.6	985	972	951	804	340	467	
3	13.6	11.6	95.4	71.8	6.8	984	969	962	782	280	337	
4	10.6	11.5	95.0	66.6	8.5	983	966	913	767	291	— ^b	
5 or 6	15.0	11.1	93.2	57.1	6.0	988	944	884	693	296	— ^b	
7 or more	18.7	10.1	88.2	44.8	1.5	974	906	813	624	122	— ^b	

^a Nonwhite females age six in 1921-1925 included in 1906-1920 cohort.

^b Base fewer than 100 sample cases.

NOTE: Cohorts include only women married to a male between the ages of 20 and 64 in 1962.

SOURCE: Special tabulations from March, 1962, Current Population Survey and supplement thereto, "Occupation Changes in a Generation," conducted by the U.S. Bureau of the Census.

TABLE 22. MEASURES OF SCHOOLING RECEIVED BY NATIVE MALES
AGE SIX BETWEEN 1906 AND 1940, BY NUMBER OF SIBLINGS

Year cohort age six and number of siblings	Per- centage distri- bution	Mean grades com- pleted	Percentage completing grade			Continuation ratio between grades per 1,000 completing lower grade							
			8	12	16	0-5	5-8	8-9	9-12	12-13	13-16		
1906-1920													
0	5.0	11.7	89.6	60.7	18.3		979	916	903	750	528	— ^a	
1	9.4	11.6	88.4	60.8	19.8		951	930	877	785	555	587	
2	12.6	11.3	89.0	55.4	15.0		964	924	848	733	535	506	
3	12.7	10.2	83.2	42.1	9.7		940	885	769	658	410	559	
4	11.8	9.7	76.7	37.6	8.5		902	850	771	637	420	— ^a	
5 or 6	19.7	9.3	75.2	30.8	5.8		908	828	695	588	360	522	
7 or more	28.7	8.3	65.0	21.6	4.2		856	759	580	574	359	536	
1921-1930													
0	6.2	12.5	91.6	75.4	25.2		966	948	917	898	582	574	
1	12.6	12.7	94.3	74.9	27.2		987	955	945	841	557	653	
2	14.3	12.1	94.8	67.4	20.0		989	959	891	799	472	629	
3	15.1	11.1	86.1	59.8	14.4		948	908	907	765	434	555	
4	11.7	10.8	89.1	51.1	8.2		957	931	856	670	397	404	
5 or 6	17.0	10.1	83.9	44.6	5.5		936	895	815	652	303	410	
7 or more	23.0	9.3	74.7	34.3	3.7		908	822	751	612	262	— ^a	
1931-1940													
0	7.7	12.9	95.9	78.6	27.8		989	970	959	854	533	665	
1	16.1	13.1	96.5	79.9	30.4		988	977	956	866	576	661	
2	16.7	12.4	95.0	73.1	22.1		986	964	963	799	520	581	
3	13.2	11.8	91.8	66.6	19.2		975	941	918	791	429	673	
4	10.8	11.5	91.4	63.1	11.6		980	933	898	768	368	500	
5 or 6	14.9	10.9	89.2	51.5	9.0		978	913	879	657	386	452	
7 or more	20.6	9.9	81.4	39.3	6.2		926	878	818	590	328	478	

^a Base fewer than 100 sample cases.

SOURCE: Special tabulations from March, 1962, Current Population Survey and supplement thereto, "Occupation Changes in a Generation," conducted by the U.S. Bureau of the Census.

The influence of family size appears more pronounced with respect to some measures of schooling than with respect to others, and the several measures of schooling suggest different answers about the presence and direction of trend in the family-size effect. For example, the series on percentage completing elementary school suggests diminution in the family-size effect; but the series on percentage completing college suggests that the influence of family size became more pronounced over time (Tables 21 and 22). Such apparent inconsistencies follow from a rise in average grades completed and a constant association between number of grades completed and number of siblings. More significant is the fact that whichever indicator of progress through the school system is selected, there is an average tendency for an increase in siblings to coincide with a decrease in educational attainment.

Intuitively, it is clear that there is overlap between family size and other background factors which are presumed to influence progress through the schools. For example, youth with many siblings are more likely to grow up in a family whose head is poorly educated than are youth with few siblings; or youth with many siblings are relatively more likely to grow up in a rural area. Some, but by no means all, of the family-size effect arises from the association of family size with other background characteristics. When six other background characteristics have been "held constant" statistically, the difference in mean grades completed between males with no more than one sibling and their age-mates with at least seven siblings is found to be about two grades (Table 23). By way of comparison, the gross or observed difference reported earlier was about three grades.

The regression coefficients describing the relation of grades completed to siblings implied, on the average, a decrease of just over 0.3 grades with each additional sibling. The slope of a line fitted, on the criterion of least squares, to the adjusted means can serve as a counterpart to the regression coefficient. The slope takes on values in the range of $-.15$ to $-.23$ for seven successive birth cohorts of native white males reaching the age of six between 1906-1910 and 1936-1940. Each additional sibling, then, results in a decrease of about 0.2 grades net of the effects of the six other background characteristics.²³

Education of Family Head

The male whose family head had attended college received about five years more schooling than his male age-mate who grew up in a

TABLE 23. MEAN GRADES COMPLETED BY NATIVE WHITE MALES AGE SIX BETWEEN 1906 AND 1940, BY NUMBER OF SIBLINGS, OBSERVED AND ADJUSTED FOR OTHER BACKGROUND CHARACTERISTICS

Year cohort age six and statistic	Number of siblings						
	0	1	2	3	4	5 or 6	7 or more
1906-1910							
Observed	— ^b	11.1	11.4	9.8	8.5	8.8	8.5
Adjusted ^a	— ^b	10.5	10.8	9.5	8.8	9.0	8.9
1911-1915							
Observed	— ^b	11.9	11.2	10.2	10.7	9.7	8.5
Adjusted	— ^b	11.1	10.6	10.0	10.5	9.9	9.2
1916-1920							
Observed	— ^b	12.3	11.8	11.1	10.2	9.9	9.1
Adjusted	— ^b	11.3	11.2	11.0	10.3	10.3	9.9
1921-1925							
Observed	12.6	12.4	12.1	11.6	11.0	10.3	9.7
Adjusted	12.4	11.7	11.6	11.2	11.3	10.6	10.3
1926-1930							
Observed	13.1	13.2	12.4	11.4	11.3	10.5	9.6
Adjusted	12.5	12.2	12.0	11.4	11.4	11.0	10.2
1931-1935							
Observed	13.0	13.0	12.4	12.0	11.7	10.9	10.2
Adjusted	12.3	12.5	12.0	12.0	11.8	11.3	11.0
1936-1940							
Observed	13.5	13.5	12.8	11.8	11.6	11.3	10.0
Adjusted	12.8	12.8	12.4	11.7	11.9	11.7	10.9

^a Adjusted for differences in composition by family type, family head's education and occupation, ethnic status, type of school attended, and region and rural-urban status of community of residence as a youth through a multiple-classification analysis.

^b Base fewer than 100 sample cases.

SOURCE: Special tabulations from March, 1962, Current Population Survey and supplement thereto, "Occupation Changes in a Generation," conducted by the U.S. Bureau of the Census.

family headed by a functional illiterate, irrespective of whether he was born in the first decade of this century or in the fourth decade. The influence of the family head's education on schooling appears more pronounced with respect to some measures of schooling than with respect to others, but an average tendency for an increase in the youth's schooling to coincide with an increase in the number of grades completed by the head of his family is unambiguous (Table 24).

A recurring feature in the pattern of continuation ratios perhaps should be singled out for comment. The number of grades completed by the head of the family apparently takes on special signifi-

TABLE 24. MEASURES OF SCHOOLING RECEIVED BY NATIVE MALES
AGE SIX BETWEEN 1906 AND 1940, BY GRADES COMPLETED
BY THE FAMILY HEAD

Year cohort age six and grades completed by head	Per- centage distri- bution	Mean grades com- pleted	Percentage completing grade				Continuation ratio between grades per 1,000 completing lower grade						
			8	12	16		0-5	5-8	8-9	9-12	12-13	13-16	
1906-1920													
16 or more	3.8	13.8	96.2	81.2	40.0		988	975	951	888	803	613	
13 to 15	3.4	12.5	96.1	65.2	25.6		997	964	907	748	— ^a	— ^a	
12	10.4	12.1	94.5	69.2	17.4		986	958	900	814	493	511	
9 to 11	7.2	10.9	88.7	49.3	11.5		972	913	836	664	489	— ^a	
8	29.1	10.3	88.2	40.4	8.6		976	905	717	639	399	530	
5 to 7	21.3	9.5	74.1	34.0	6.9		935	792	715	642	371	550	
4 or fewer	25.0	7.8	57.7	20.2	4.1		787	732	630	555	354	— ^a	
1921-1930													
16 or more	4.5	15.3	99.5	95.6	61.7		995	1000	1000	960	834	774	
13 to 15	4.5	13.9	97.9	89.3	37.4		995	984	988	923	699	599	
12	12.2	12.7	96.1	78.1	22.7		990	971	947	859	509	572	
9 to 11	8.7	11.9	93.9	67.4	15.1		984	954	933	769	406	— ^a	
8	27.5	11.0	92.2	54.9	8.6		970	951	838	710	341	462	
5 to 7	22.1	10.5	83.3	47.6	8.9		951	876	846	676	359	521	
4 or fewer	20.6	9.3	70.9	38.8	5.6		871	814	780	702	347	417	
1931-1940													
16 or more	4.4	15.3	100.0	94.1	63.4		1000	1000	976	964	886	761	
13 to 15	5.2	14.3	98.8	90.5	44.3		996	992	994	922	762	642	
12	14.4	13.0	97.5	84.3	24.6		990	985	983	880	518	564	
9 to 11	13.8	12.1	94.1	69.8	19.1		976	965	956	776	479	572	
8	27.9	11.7	94.3	65.5	15.1		975	967	896	775	377	613	
5 to 7	19.4	11.0	89.4	53.4	9.6		977	915	867	688	367	490	
4 or fewer	14.9	9.8	78.2	37.4	6.2		937	834	822	581	349	— ^a	

^a Base fewer than 100 sample cases.

SOURCE: Special tabulations from March, 1962, Current Population Survey and supplement thereto, "Occupation Changes in a Generation," conducted by the U.S. Bureau of the Census.

cance as the minimum schooling required by or for the youth. The continuation ratio between any given pair of grades tends to decrease between successively lower origin strata defined by the family head's educational attainment. An unusually sharp drop in the ratio tends to occur between the stratum for which continuation implies attainment equal to that of the family head and the next lower stratum. For example, males from families whose heads terminated their schooling after the ninth grade are much more likely to continue between the eighth and ninth grades than are their male age-mates whose family heads left school upon completing the eighth grade. The proportion of males continuing from ninth through twelfth grade is substantially higher for the group whose family heads had completed twelfth grade than for the group whose family heads left the secondary system before completion.

The influence of family head's education on schooling also can be detected in the differential educational attainment of children of a given age. At the time of the 1960 census, for example, differentials by head's education with respect to progress in the school system were pronounced among youth who had been sixteen years old at the opening of the 1959-1960 school year. Fewer than 1 per cent of the males whose family head had attended college had left school with no more than an elementary education, in contrast to a fifth of their male age-mates whose family head had completed fewer than eight grades. In the group whose family head had attended college, 28 per cent were entering their senior year of high school or beginning college; only 6 per cent of the group whose family head had completed fewer than eight grades had progressed equally far through the school system. The rapidity with which females progress through the school system also varies directly with the educational attainment of the family head, although the differentials are somewhat less sharp than those observed for males (Table 25).

When allowance is made for the overlap between the family head's educational attainment and other background factors that influence a youth's schooling, the effect of family head's education is reduced, but by no means eliminated. The regression coefficients describing the relation of grades completed by the respondent to grades completed by his family head range from .39 to .42 over seven cohorts of native white males reaching age six between 1906-1910 and 1936-1940. After the mean number of grades completed by respondents in each origin stratum has been adjusted to "hold constant" six other background characteristics which influence schooling, sizable differences in

TABLE 25. PERCENTAGE DISTRIBUTION BY ENROLLMENT STATUS
AND GRADES COMPLETED, FOR PERSONS AGE 16 AT OPENING
OF 1959-1960 SCHOOL YEAR BY SEX AND GRADES
COMPLETED BY THE FAMILY HEAD

Sex and grades completed by family head	Not enrolled, by grades completed					Enrolled, by grades completed				
	0-6	7	8	9-10	11+	0-6	7	8	9-10	11+
Male										
13 or more	0.0	0.0	0.5	0.5	2.0	1.0	0.5	2.0	65.3	28.2
12	0.0	0.7	1.3	3.7	3.3	1.0	0.0	1.3	67.3	21.3
9 to 11	1.8	1.8	2.9	7.5	3.6	0.7	1.1	4.6	57.1	18.9
8	1.2	1.2	4.9	4.0	2.8	2.8	0.8	8.5	59.1	14.6
7 or fewer	6.3	5.7	7.2	9.3	3.9	5.4	5.4	6.3	44.1	6.3
Female										
13 or more	0.6	0.6	0.6	1.7	1.1	1.1	0.6	1.1	67.4	25.3
12	1.1	0.0	0.7	3.4	3.4	1.1	0.7	3.4	59.7	26.5
9 to 11	0.0	0.0	1.6	5.0	3.8	1.9	1.3	1.3	60.9	24.3
8	1.1	0.4	2.8	6.4	4.9	0.7	1.1	2.8	59.0	20.8
7 or fewer	3.3	3.3	4.8	7.3	2.7	2.4	3.0	6.0	53.5	13.6

SOURCE: Special tabulations based on .001 sample of records from the 1960 Census of Population.

attainment by head's education remain. The slope of a line fitted, on the criterion of least squares, to the adjusted means takes on values in the range of .18 to .25 for the seven cohorts. The observed increase of 0.4 grades in respondent's educational attainment for each incremental grade completed by the family head is reduced, then, to an increase of about 0.2 grades when allowance has been made for the overlap in background characteristics. There is no evidence of trend in the extent to which the educational attainment of the family head influences the attainment of the respondent.

Other Background Indicators

The influences on schooling of not only number of siblings and education of the family head, but also the head's occupation, the presence of both parents in the family home, ethnic status, the type of school attended, and the region and rural-urban status of the community of residence have been examined for the several birth cohorts of adult native males. The substantive findings are not recapitulated here, inasmuch as they have been reported at some length elsewhere.²⁴ About a third of the variance in educational attainment for each cohort and for both whites and nonwhites can be attributed to the additive effects of the seven background indicators. Social background, as indexed by these seven characteristics, has become neither more nor less important as a determinant of the amount of schooling received.

Father's occupation and the region and rural-urban status of the community of residence, as well as family size and the education of the father, also have been found to influence the progression of children through the school system. Their effects on both enrollment status and the number of grades completed at a given age have been documented for teen-age boys with statistics from the 1960 census.²⁵ The direction in which these background characteristics influence educational attainment is the same for the teen-agers and for the older men. Whether the magnitudes of their effects will be the same when the teen-agers have completed all schooling remains unknown, of course.

Perhaps the most important question left unanswered by these analyses is how much of the effect of social background on schooling should be attributed to overlap between background and intelligence rather than to background as such. Even if the issue of possible contamination of measures of intelligence by background is set aside, evidence on the relation between measured intelligence and social background is scant. One recent set of estimates, based on a sifting of the available evidence about the relations among educational attainment,

number of siblings, father's education, father's occupation, and measured intelligence, implies that the three background indicators and ability had substantial independent effects on the amount of schooling completed by white males who reached school age around 1940. About two-fifths of variance in attainment can be attributed to the additive effects of the three background characteristics and measured intelligence. Social background alone accounts for 15 per cent of the variance in grades completed; intelligence as measured early in life alone accounts for 16 per cent of the variance; and 11 per cent of the variance must be allocated to the joint effects of background and intelligence.²⁶

Unfortunately, there is no prospect that better estimates of the relations among ultimate educational attainment, social background, and intelligence measured early in life will become available in this century, let alone that it will be possible to determine whether the importance of background relative to intelligence has been changing over time. One opportunity to establish a firm benchmark was lost within the past few years. As part of the Civil Rights Act of 1964, Congress instructed the Commissioner of Education to undertake a survey "concerning the lack of availability of equal educational opportunities for individuals by reason of race, color, religion, or national origin in public educational institutions." As part of the survey operation, about 76,000 first-graders were administered standard achievement tests within a month of the opening of the 1965-1966 school year. The ability measurements antecede regular schooling for these children, who can, moreover, be subclassified on the basis of kindergarten attendance. Indicators of social background, such as the type of family and the education of the family head, also were obtained for each student. The name of the student was not made a part of the basic record, however. As a consequence, any chance of resurveying these individuals to obtain estimates of the influence of their background and ability at the point of school entry on their subsequent progress through the schools has been eliminated.²⁷

Color

The public interest in the differential in schooling that obtains between so-called white Americans and the racial minorities is attested by the section calling for a survey of educational opportunities in the Civil Rights Act of 1964. That a differential in favor of whites exists with respect to educational attainment is well-known, of course. As indexed by mean grades completed, the white-nonwhite differential in

TABLE 26. MEASURES OF SCHOOLING RECEIVED FOR
COHORTS AGE SIX BETWEEN 1906 AND 1945,
BY SEX AND COLOR

Sex and year cohort age six	Mean grades completed		Percentage completing					
			Grade 16		Grade 12		Grade 8	
	White	Non- white	White	Non- white	White	Non- white	White	Non- white
Male								
1906-1910	9.1	5.8	7.5	1.9	27.8	9.8	71.9	32.7
1911-1915	9.8	6.4	8.8	2.4	34.7	12.4	77.9	38.2
1916-1920	10.2	7.0	9.2	2.9	41.4	15.5	82.0	44.3
1921-1925	10.8	7.8	10.7	3.6	49.9	21.4	86.3	53.5
1926-1930	11.2	8.5	14.0	4.5	55.8	26.7	88.4	62.2
1931-1935	11.4	9.0	15.8	5.5	56.2	29.8	89.2	67.7
1936-1940 ^b	12.0	10.2	19.4	10.9	69.3	43.8	91.8	75.9
1941-1945 ^b	— ^a	— ^a	— ^a	— ^a	72.7	53.4	94.1	86.0
Female								
1906-1910	9.4	6.5	5.7	2.3	32.7	11.5	76.4	38.7
1911-1915	10.0	7.2	6.8	3.1	39.5	14.8	81.7	46.0
1916-1920	10.3	7.7	6.5	3.2	45.1	17.7	85.3	52.3
1921-1925	10.7	8.3	6.5	3.7	52.8	23.2	89.0	60.4
1926-1930	11.0	9.1	6.5	4.2	59.8	30.3	91.0	68.8
1931-1935	11.2	9.6	7.6	4.8	61.1	35.2	92.0	75.8
1936-1940 ^b	11.5	10.4	9.6	7.3	68.1	41.8	93.3	87.4
1941-1945 ^b	— ^a	— ^a	— ^a	— ^a	72.8	51.3	95.8	88.7

^a Ultimate attainment cannot yet be evaluated.

^b Educational attainment for the two most recent cohorts probably is overstated relative to attainment for earlier cohorts because of differences in the source survey operations.

SOURCE: *U.S. Census of Population: 1960*, vol. I, part 1, Table 173 for cohorts 1906-1935; *Current Population Reports*, Series P-20, no. 158, December, 1966, Table 4, for cohorts 1936-1945.

attainment has narrowed appreciably over the past six decades; but there remains a difference of just under two grades for males and just over a grade for females in the most recent cohort whose schooling can be assumed essentially complete (Table 26).

Another way of expressing the white-nonwhite difference in schooling is in terms of the difference in birth year between cohorts of whites and nonwhites, respectively, who have attained the same level of schooling. The most recent cohort of nonwhites for whom a reading on ultimate educational attainment is available reached the age of six in the late 1930's and had been born in the years 1930-1935. The mean number of grades completed by this cohort, 10.2 for males and 10.4 for females, matches the attainment of the cohort of whites who reached the age of six in the late 1910's and had been born in the years 1910-1915. The attainment of nonwhites, then, lagged behind the attainment of whites by twenty years.

One interesting feature of the white-nonwhite difference in schooling is not captured by the difference in mean grades completed. Schooling is distributed with less equality among nonwhites than among whites, that is, the variability in grades completed is greater within the nonwhite population than in the white population. The lag in the attainment of nonwhites relative to that of whites, expressed as the difference in birth year between cohorts with like attainment, is substantially less with respect to the college-graduation rate than with respect to the elementary-completion rate. For example, the college-graduation rate for the nonwhite cohort reaching the age of six in the late 1930's (11 per cent) matches the rate for white males who reached the age of six in the early 1920's. The elementary-completion rate for the late-1930's cohort of nonwhites (76 per cent) matches the rate for white males who reached the age of six in the early 1910's, however. Implied is a lag of fifteen years with respect to the college-graduation rate, in contrast to a lag of twenty-five years with respect to the elementary-completion rate.

It has not been at the point of college entry nor within the institutions of higher education that the nonwhite, by comparison with his white age-mate, has been handicapped most severely in his progress through the school system. The sharpest differences between the continuation ratios for nonwhites and whites, respectively, have occurred at lower grade levels (Tables 27 and 28). For the cohort whose members reached the age of six between 1906 and 1910, for example, the deficit in the continuation ratio for nonwhites widened between successive grade levels to a maximum of twenty percentage points be-

TABLE 27. CONTINUATION RATIO BETWEEN SUCCESSIVE GRADES PER 1,000 COMPLETING LOWER GRADE FOR COHORTS OF MALES AGE SIX BETWEEN 1906 AND 1944, BY COLOR

Year cohort age six, and color	Grades																	
	0- 1	1- 3	3- 5	5- 7	7- 8	8- 9	9- 10	10- 11	11- 12	12- 13	13- 14	14- 15	15- 16	16- 17				
1906-1910																		
White	982	985	946	893	881	633	857	822	868	528	824	734	843	468				
Nonwhite	900	883	746	690	784	595	804	783	817	451	804	672	807	468				
1911-1915																		
White	988	989	961	918	903	712	871	831	864	492	824	740	844	493				
Nonwhite	930	907	786	722	799	642	806	775	810	435	800	671	839	488				
1916-1920																		
White	991	991	970	935	920	766	887	850	874	436	819	735	850	503				
Nonwhite	947	921	821	756	819	686	815	779	804	395	801	694	841	484				
1921-1925																		
White	993	992	977	952	943	830	905	871	883	412	824	735	858	486				
Nonwhite	962	940	863	805	851	750	836	792	805	372	793	691	826	510				
1926-1930																		
White	993	993	980	959	955	870	917	884	896	442	838	772	878	468				
Nonwhite	973	959	899	846	876	792	850	799	800	369	798	704	819	504				
1931-1935																		
White	993	994	983	962	956	880	906	878	899 ^a	480	847	795	868 ^a	446 ^b				
Nonwhite	980	968	920	870	892	820	853	794	794 ^a	398	801	724	800	475 ^a				
1936-1940																		
White	993	994	986	969	964	906	923	904	912 ^b	465 ^a	828 ^b	786 ^b	822 ^c	421 ^c				
Nonwhite	984	977	940	901	914	859	871	814	801 ^b	372	762 ^a	698 ^a	742 ^a	409 ^b				
1942																		
White	993	995	989	974	969	921	924	906	908 ^c	436 ^b	775 ^c	739 ^c	737 ^c	— ^d				
Nonwhite	982	978	950	911	926	879	871 ^c	817	790 ^c	307 ^a	696 ^c	619 ^b	613 ^b	— ^d				
1944																		
White	994	996	991	979	974	933	927	906 ^a	897 ^c	426 ^c	728 ^c	535 ^c	166 ^c	— ^d				
Nonwhite	989	986	962	926	933	889	872 ^a	808 ^a	775 ^c	286 ^b	614 ^c	436 ^c	238 ^c	— ^d				

^a 0.50 to 0.99 per cent of cohort enrolled in higher grade in 1960. ^b 1.00 to 1.49 per cent of cohort enrolled in higher grade in 1960. ^c 1.50 or more per cent of cohort enrolled in higher grade in 1960. ^d Not calculated.

SOURCE: *U.S. Census of Population: 1960*, vol. I, part 1, Tables 168, 172, and 173.

TABLE 28. CONTINUATION RATIO BETWEEN SUCCESSIVE GRADES PER 1,000
COMPLETING LOWER GRADE FOR COHORTS OF FEMALES AGE SIX
BETWEEN 1906 AND 1944, BY COLOR

Year cohort age six, and color	Grades															
	0- 1	1- 3	3- 5	5- 7	7- 8	8- 9	9- 10	10- 11	11- 12	12- 13	13- 14	14- 15	15- 16	16- 17		
1906-1910																
White	982	988	958	908	904	676	870	830	879	452	773	645	774	200		
Nonwhite	937	927	806	705	784	604	788	765	817	438	824	679	826	353		
1911-1915																
White	989	992	971	931	921	742	883	838	881	428	781	677	764	348		
Nonwhite	958	947	848	746	802	658	796	762	806	432	825	710	838	380		
1916-1920																
White	992	994	979	945	935	788	891	849	886	359	767	680	768	343		
Nonwhite	969	959	878	782	820	698	801	764	791	374	815	712	844	386		
1921-1925																
White	994	995	984	960	952	843	907	871	892	308	749	682	782	309		
Nonwhite	977	968	907	828	850	752	824	780	797	340	796	710	838	383		
1926-1930																
White	994	995	986	967	964	889	924	889	901	290	726	667	774	282		
Nonwhite	983	978	935	869	881	809	848	802	801	308	772	695	831	366		
1931-1935																
White	995	996	988	971	968	908	921	885	898 ^a	305	753	700	773	246		
Nonwhite	986	986	957	902	904	845	861	805	793 ^a	317	766	708	798	308		
1936-1940																
White	995	996	990	977	974	926	926	894	905 ^a	306	756	715	758	210		
Nonwhite	988	989	970	929	927	876	873	814	800 ^a	312	765	712	786	248		
1942																
White	996	997	993	982	979	940	930	899	910 ^a	324	750	713	716 ^a	— ^d		
Nonwhite	990	991	978	945	944	899	885	821	795 ^b	286	729 ^a	676 ^a	683 ^a	— ^d		
1944																
White	996	997	994	985	982	949	935	904	901 ^c	338 ^a	732 ^b	577 ^c	206 ^c	— ^d		
Nonwhite	992	993	983	953	950	908	887 ^a	827 ^a	791 ^c	291 ^a	665 ^b	497 ^c	278 ^c	— ^d		

^a 0.50 to 0.99 per cent of cohort enrolled in higher grade in 1960. ^b 1.00 to 1.49 per cent of cohort enrolled in higher grade in 1960. ^c 1.50 or more per cent of cohort enrolled in higher grade in 1960. ^d Not calculated.

SOURCE: U.S. Census of Population: 1960, vol. I, part 1, Tables 168, 172, and 173.

tween grades five and seven. For the cohort whose members reached the age of six between 1936 and 1940, the deficit in the continuation ratio for nonwhites widened between successive grade levels to a maximum of ten percentage points between grades eleven and twelve.

Among both the Southern-born and persons born in the North and West, the disadvantage of the nonwhite with respect to schooling has lessened over time (Table 29). Nonwhite males who had been born in the South and reached school age shortly after 1900 completed an average of 2.8 fewer grades than their Southern-born white age-mates, but the difference averaged only 2.1 grades among Southern-born males who reached school age in the early 1930's. Differences for the corresponding cohorts amounted to 1.8 and 1.1 grades, respectively, among males born in the North and West. Convergence of the attainment level of nonwhites with the attainment level of whites appears to have proceeded as rapidly, in absolute terms, in the South as in the rest of the nation, although the color differential remains substantially greater among the Southern-born. The word "appears" is used advisedly, for there is no certainty that schooling occurred in the region of birth or that it is progression through Southern and non-Southern school systems which is being contrasted.

The handicap of the Southern-born nonwhite relative to the white born in the South is markedly more pronounced than the handicap of the non-Southern nonwhite relative to the non-Southern white at the lower levels of schooling. In the Southern population, for example, the elementary-completion rate remained twenty percentage points lower for nonwhites than for whites in the cohort reaching school age in the early 1930's; but the color differential had nearly disappeared among members of the same cohort born outside the South. In contrast, the color differential with respect to the continuation of high-school graduates into the colleges or the rate of graduation among college entrants has been no greater in the South than in the rest of the nation.

Ultimate educational attainment cannot yet be evaluated for more recent birth cohorts. Distributions by enrollment status and grades completed as of 1960, however, provide a fairly sound basis for estimating the ultimate percentage of elementary-school graduates for cohorts reaching school age in the late 1940's (Table 30). Whereas among whites there exists a "high-school dropout" problem, there exists an "elementary-school dropout" problem among nonwhites. The elementary-school dropout may pose the more serious problem. Not only is he ill-equipped to participate effectively in the nation's economic

TABLE 29. MEASURES OF SCHOOLING RECEIVED FOR MALES AGE SIX BETWEEN 1901 AND 1935, BY COLOR AND REGION OF BIRTH

Region, year cohort age six, and color	Mean grades completed	Percentage completing grade			Continuation ratio between grades per 1,000 completing lower grade						
		8	12	16	0-5	5-8	8-9	9-12	12-13	13-16	
South											
1901-1910											
White	8.1	57.5	21.3	5.1	832	691	647	572	528	454	
Nonwhite	5.3	25.4	6.9	1.4	528	481	558	488	499	421	
1911-1920											
White	8.9	66.5	29.8	6.3	887	750	746	602	449	470	
Nonwhite	6.3	36.0	10.9	2.1	653	550	636	479	417	460	
1921-1930											
White	9.9	75.5	42.0	9.5	920	820	831	670	429	526	
Nonwhite	7.6	50.9	18.2	2.9	775	657	738	484	369	436	
1931-1936											
White	10.4	79.8	46.3	12.1	940	850	856	677	472	553	
Nonwhite	8.3	59.9	22.6	3.6	839	714	786	479	381	420	
Non-South											
1901-1910											
White	9.5	77.8	29.2	7.9	959	811	613	612	536	506	
Nonwhite	7.7	55.6	18.4	3.8	804	692	613	539	450	461	
1911-1920											
White	10.5	87.1	42.5	10.2	981	888	744	656	459	525	
Nonwhite	9.0	71.4	30.2	5.0	897	796	740	572	360	457	
1921-1930											
White	11.4	93.4	58.4	13.6	988	945	860	726	423	552	
Nonwhite	10.0	85.6	46.3	6.9	950	901	860	630	334	448	
1931-1936											
White	11.8	94.5	61.2	17.4	989	955	893	726	477	596	
Nonwhite	10.7	89.3	47.7	8.2	962	928	878	608	389	444	

SOURCE: U.S. Census of Population: 1960, Subject Report PC(2)-5B, Table 3.

and social life, but he also lacks the habits and skills that would facilitate learning outside the classroom. Yet, perhaps as many as an eighth of the nonwhite males now reaching their majority have completed fewer than eight grades of formal schooling. A twelfth of the nonwhite females may have equally little education. In contrast, no more than 4 per cent of the young whites lack an elementary-school education. The problem of the elementary-school dropout continues to be especially acute in the South.

Information about the distribution of school leavers in each cohort by age and grade might illuminate the so-called dropout problem. To interpret the distributions by enrollment status and grades completed for successive birth-year cohorts as readings on a single cohort as it progresses through the schools is tempting. Differences between these distributions then would provide estimates of school leavers by age and grade. A few attempts at reconciling the age-grade distributions of school leavers implied by increments to the not-enrolled population with the distributions implied by decrements to the enrolled population demonstrate the futility of inferring a cohort's progress through the schools from such statistics, however. (The difficulty can be illustrated by reference to distributions for white females in the cohorts reaching age six in 1948 and 1949 which are reported in Table 30. The number of cohort members who were not enrolled in school and had completed at least twelve grades increased from seven to 62 per thousand in the course of the year. These school leavers, numbering 55 per thousand, must have been drawn from the group of cohort members who were in school and had completed at least eleven grades a year earlier; but the in-school group who had completed at least eleven grades a year earlier numbered only 48 per thousand.)

A confounding of the effect of race with the effect of region on schooling has been documented earlier. The effect of race also is confounded with the effects of other background characteristics; but there is, at present, no possibility of assessing trend in the racial differential in schooling within other background strata. The obstacle is one of numbers, or dollars.

In a survey covering a random sample of the national population, only some 10 per cent of the respondents will be members of America's racial minorities. To assess trend, the nonwhite respondents must be classified into several cohorts defined by year of birth. To assess trend for cohort members sharing a common background, each cohort must be subclassified into strata defined by background. Sampling ratios of about one in 500 are required to ensure minimally adequate

TABLE 30. PERCENTAGE DISTRIBUTION BY ENROLLMENT STATUS
AND GRADES COMPLETED FOR COHORTS AGE SIX BETWEEN
1945 AND 1949, BY SEX, COLOR, AND REGION

Sex, year cohort age six, color, and region	Not enrolled, by grades completed										Enrolled, by grades completed													
	0-4	5-7	8	9	10	11	12	13+	0-7	8	9	10	11	12+										
<i>Male</i>																								
1945																								
White	1.6	4.0	5.9	6.0	7.0	5.3	34.0	6.9	0.7	0.3	0.6	0.8	2.8	24.0										
Nonwhite	5.1	11.6	8.3	8.5	10.2	8.5	25.0	3.4	1.8	0.7	1.1	2.0	4.5	9.3										
1947																								
White	1.1	3.4	4.6	5.0	5.5	4.2	20.0	0.7	1.6	0.9	2.0	6.0	24.5	20.5										
Nonwhite	3.7	9.0	6.6	7.0	7.2	5.2	12.0	0.4	5.0	3.3	5.5	10.3	17.9	6.7										
1948																								
White	0.9	2.9	3.9	4.2	4.1	2.6	3.8	0.1	2.5	2.4	7.0	26.1	37.5	1.9										
Nonwhite	3.2	7.8	5.2	5.2	4.8	2.9	3.2	0.1	8.5	6.9	12.1	20.1	18.7	1.3										
1949																								
White	0.9	2.6	2.9	2.6	2.2	1.0	0.4	0.0	5.4	8.8	28.2	41.2	3.6	0.2										
Nonwhite	2.8	6.1	3.5	3.2	2.3	1.0	0.6	0.0	16.4	14.6	23.1	22.1	4.0	0.2										
<i>Female</i>																								
1945																								
White	1.1	2.7	4.6	5.8	7.8	6.1	43.4	9.0	0.4	0.2	0.3	0.4	2.0	16.2										
Nonwhite	2.8	7.9	7.4	8.3	11.1	9.9	30.6	5.1	1.1	0.4	0.9	1.1	3.6	9.6										
1947																								
White	0.8	2.2	3.6	4.7	6.3	5.0	29.3	1.1	1.1	0.6	1.1	3.3	20.8	20.0										
Nonwhite	2.1	6.0	5.8	6.7	9.2	7.1	17.8	0.7	3.4	2.0	3.6	7.9	18.0	9.4										
1948																								
White	0.7	1.9	3.0	3.9	5.0	3.4	6.1	0.1	1.7	1.3	4.1	22.8	43.8	2.2										
Nonwhite	1.8	5.4	5.0	5.6	6.3	4.2	5.0	0.1	5.3	4.6	9.5	20.7	24.1	2.3										
1949																								
White	0.7	1.7	2.4	3.0	3.2	1.3	0.7	0.0	3.4	5.0	24.7	48.9	4.7	0.1										
Nonwhite	1.5	4.3	3.8	4.1	3.7	1.6	1.0	0.0	10.1	11.0	23.4	28.9	6.1	0.2										

SOUTH														
Male														
1947														
White	1.7	6.4	6.1	6.0	5.9	4.1	17.8	0.6	2.2	1.3	2.7	7.0	22.8	15.4
Nonwhite	4.8	11.8	7.0	6.7	6.3	4.1	9.4	0.3	6.1	3.9	6.3	10.9	16.9	5.5
Female														
1947														
White	1.2	4.4	5.2	6.3	7.2	5.3	23.0	1.0	1.6	0.9	1.5	4.1	21.6	16.4
Nonwhite	2.5	7.8	6.2	6.8	8.5	6.3	13.8	0.5	4.0	2.6	4.4	9.1	18.4	9.0
NON-SOUTH														
Male														
1947														
White	0.9	2.0	4.0	4.5	5.3	4.2	21.0	0.8	1.3	0.8	1.7	5.5	25.2	22.8
Nonwhite	1.8	4.4	5.9	7.5	8.9	7.1	16.4	0.8	3.1	2.1	4.1	9.3	19.7	8.8
Female														
1947														
White	0.6	1.3	3.0	4.1	5.9	4.9	31.8	1.2	0.9	0.5	1.0	2.9	20.4	21.5
Nonwhite	1.5	3.1	5.0	6.6	10.2	8.3	24.2	1.3	2.2	1.2	2.5	5.9	17.5	10.3

SOURCE: *U.S. Census of Population: 1960*, vol. I, part 1, Tables 168, 172, 240; and *Reports by States*, Table 102.

numbers of adult nonwhite respondents for such analyses, but the sampling ratio for the Current Population Survey conducted by the Bureau of the Census, and regarded as large in scale, is on the order of one in 1,700. Still higher sampling ratios are needed when the study population is made up of young persons whose distribution by enrollment status and grades completed is changing rapidly with each advance of a year in age. The one in 1,000 sample of records from the 1960 Census of Population made available by the Bureau of the Census for special analyses proves grossly inadequate to establish a firm benchmark for the nation's youth.

In the absence of information about schooling and social background from sufficiently large numbers of minority-group respondents, differences in background must be "held constant" statistically to evaluate the effect of race as such on schooling. One such analysis made allowance for the difference between white and nonwhite males in their distributions with respect to four aspects of social background: the family type; education and occupation of the family head; and the number of siblings. The difference in educational attainment that remains when these four factors have been "held constant" has been identified as the effect of "color" although compounded in it are the effects of unmeasured aspects of social background as well as abilities and aspirations. The residual difference, or the effect of "color," is estimated to be about two grades for the cohort reaching school age before World War I and about one year for the cohort reaching school age in the 1930's (Table 31). The disadvantage of the nonwhite with respect to progress through the schools that accrues from his color as such appears to have lessened over time. The conclusion cannot be stated unequivocally because of both the hypothetical nature of a calculation in which whites and nonwhites are matched with respect to background and the substantial number of potentially important but unmeasured factors.

GRADES COMPLETED AS AN INDICATOR OF EDUCATION

Inquiry into the possible meanings of the concept of "education" is not likely to lead to an uniquely apt statistical indicator of that concept. Education, like unemployment, is an elusive concept. Both terms are common in usage, yet defy precise definition. It is somewhat instructive to review the problem of measuring unemployment as it has come

TABLE 31. GRADES COMPLETED BY NATIVE WHITE AND NONWHITE MALES REACHING AGE SIX BETWEEN 1906 AND 1940, WITH ALTERNATIVE ESTIMATES OF THE RESPECTIVE EFFECTS OF FAMILY BACKGROUND AND "COLOR" ON SCHOOLING

Statistic	Year cohort age six		
	1906-20	1921-30	1931-40
Mean grades completed by			
White males	10.1	11.2	11.9
Nonwhite males	6.6	8.1	9.9
Difference in means, white less nonwhite	3.5	3.1	2.0
Difference in means due to family type, education and occupation of head, and number of siblings			
Estimate A	1.4	1.1	1.2
Estimate B	1.5	0.9	1.2
Estimate C	1.6	1.4	0.9
Residual difference in means due to "color"			
Estimate A	2.1	2.0	0.8
Estimate B	2.0	1.2	0.8
Estimate C	1.9	1.7	1.1

Estimate A: Effect of color estimated as partial regression coefficient in the regression of grades completed on color, family type, education and occupation of head, and number of siblings for all males.

Estimate B: Effect of color estimated by using regression of grades completed on family type, education and occupation of head, and number of siblings for white males with mean background composition of nonwhite males.

Estimate C: Effect of color estimated by using regression of grades completed on family type, education and occupation of head, and number of siblings for nonwhite males with mean background composition of white males.

SOURCE: Duncan, Otis Dudley, "Discrimination against Negroes," *Annals of the American Academy of Political and Social Science*, vol. 371, May, 1967, Table 3, p. 101.

to be understood over the past several decades. The pithy statement of the problem which follows captures the essential points.

... it is important to remember that there are no unique "right" definitions. The test of a definition of unemployment—or of anything else—is its usefulness. A number of different possible definitions might be about equally useful. What matters is to get a definition that accords reasonably well with the common understanding of the term and one that is applied consistently from time to time and from one part of the economy to another. Given this consistency, we can develop the experience that tells us whether or not unemployment is serious.²⁸

Can a definition of education in terms of grades completed square with the common understanding of the term "education"? Most usages

would include the notion that education involves a command of some valuable body of skills and facts. The criterion of a valuable skill or fact might be that its transmission warrants expenditure of public monies. The institutionalized form of such transmission is the regular school system, and, hence, the school curriculum tends to define the most highly valued body of knowledge. The school system is graded, with the content of the curriculum of successively higher grades incorporating increasingly higher orders of skills and facts. Accordingly, the number of grades completed indexes the amount of the valuable knowledge that has been mastered.

The number of grades completed is an imperfect measure of education, even if the rather narrow conception of education outlined above is accepted. Learning can occur outside the classroom as well as inside it, and in-school learning varies among those passing through the same sequence of graded classrooms. On the other hand, the number of grades completed is an item of information that can be secured rather inexpensively; that is amenable to independent checks on accuracy; that is irreversible over time for an individual; that has an established history of collection on a mass basis. Considerations of these two types must be weighed one against the other in evaluating the utility of grades completed as an indicator of education.

Relevant to the point of variability in measured intellectual development among individuals who have completed the same grade is the survey of educational opportunities referred to earlier. The importance of the survey findings is that they not only document variability in measured achievement among children attending the same grade, but also reveal noteworthy differences in mean measured achievement among grade-mates who differ in background. Widely commented on has been the finding that the mean measured achievement of Negro children falls short of the measured achievement of their white grade-mates at each grade level surveyed. Also to be observed in the survey results are persistent differentials within racial groups by place of residence and by parental education, however. Residence in the nonmetropolitan South or low parental educational attainment, for example, is a distinct handicap to the child's intellectual development. There can be no doubt that mastery of the valuable skills and facts varies in systematic ways among children who have progressed equally far through the school system.

Moreover, the survey results suggest that out-of-school learning is facilitated by the intellectual skills acquired through formal schooling. Included in the battery of tests administered to the secondary-

school students were not only verbal and nonverbal achievement tests, but also a general-information test which probed "areas likely to have become known through out-of-school rather than curriculum activities."²⁰ Among the practical arts covered were tools, automobiles, and building for males, and food, sewing, and decorating for females. Natural sciences were represented by questions on aeronautics and space, chemistry, and health; the humanities and arts by questions on literature, music, and art; and social science by questions on history, government, and public affairs. The coefficients of correlation (reported in the *Supplemental Appendix to the Survey . . .*) between scores on the verbal and nonverbal achievement tests and the general-information test for twelfth-graders are summarized below.

	<i>White</i>	<i>Nonwhite</i>
Verbal and nonverbal achievement	.52	.57
Verbal achievement and general information	.77	.78
Nonverbal achievement and general information	.50	.57

It can be argued that the paper-and-pencil character of the out-of-school learning test introduces a bias or is culture-bound, but effective participation in American society has precisely this bias.

Among the items of information collected for students covered by the educational-opportunities survey were parental education, the type of family, and the number of siblings. The associations of measured intellectual development or mastery of general information with these indicators of social background for grade-mates are not unlike the associations between number of grades completed and the social-background characteristics for older Americans (Table 32). These indicators of background can be shown to influence in a similar direction both the relative numbers enrolled and the mean number of grades completed by the enrolled among age-mates in the school-age population.³⁰

Can patterned variability in achievement within grade and patterned variability in the number of grades completed be reconciled in such a way that grades completed adequately indexes the command of valuable knowledge on the part of adults? If overlap in achievement between the less able children in successive grades is not great and if, at each grade level, it is the children of lesser ability who become school leavers, the distribution of adults by grades completed will be a more or less faithful representation of their distribution by ability or

TABLE 32. COEFFICIENTS OF CORRELATION BETWEEN SELECTED
"EDUCATION" MEASURES AND FAMILY BACKGROUND
CHARACTERISTICS, FOR THREE GROUPS OF STUDENTS
IN 1965 AND TWO BIRTH COHORTS OF NATIVE
MALES IN 1962

Group and "education" measure	Parental education ^a		Family type ^b		Number of siblings ^c	
	White	Negro ^d	White	Negro ^d	White	Negro ^d
First-graders, 1965						
Verbal achievement	.24	.21	.05	.01	-.14	-.09
Nonverbal achievement	.30	.23	.06	.02	-.10	-.08
Sixth-graders, 1965						
Verbal achievement	.31	.22	.11	.10	-.14	-.12
Nonverbal achievement	.21	.19	.09	.07	-.06	-.07
Twelfth-graders, 1965						
Verbal achievement	.33	.26	.07	.04	-.17	-.23
Nonverbal achievement	.22	.21	.06	.07	-.10	-.16
General information	.30	.24	.08	.05	-.18	-.20
Males, 20-26 in 1962 ^e						
Grades completed	.47	.36	.08	.02	-.40	-.26
Males, 27-61 in 1962						
Grades completed	.41	.37	.09	.07	-.34	-.16

^a Grades completed by head of the family in which respondent lived at age 16 for native males.

^b At age 16 for adult males.

^c Ultimate number of siblings underestimated more seriously the younger the respondent.

^d Nonwhite for adult males.

^e Excludes an appreciable number of males in armed forces or institutions.

SOURCE: *Supplemental Appendix to the Survey on Equality of Educational Opportunity*, Government Printing Office, Washington, 1966, and Duncan, Beverly, *Family Factors and School Dropout: 1920-1960*, University of Michigan, Ann Arbor, 1965, Table 3-2.

command of the valued knowledge. The coefficient of correlation between measured mental development and the number of grades completed among adults probably is on the order of .6, an estimate influenced heavily by the relation of scores on the Armed Forces Qualification Test to grades completed among males called for military service. No appreciable difference can be detected in the closeness of the association among whites and that among nonwhites. In evaluating the strength of this association, it is germane to note the similarity with the association between scores on the verbal and nonverbal components of the achievement test administered to students as part of the educational-opportunities survey.

Although the achievement of white students exceeds the achievement of their nonwhite grade-mates, differential attrition by grade apparently operates to minimize the white-nonwhite difference in ability among persons who terminate their schooling at the same grade level. The mean mental development of nonwhite adults does not differ substantially from that of white adults who have terminated their schooling at the same grade level.³¹

Still troublesome is whether increases in the average duration of schooling or the average number of grades completed by members of successive birth cohorts can be taken to mean that young American adults are more "educated" or able than older Americans. If a recently constructed achievement test were administered to a cross-section of American adults, the mean score of the young probably would exceed that of the old. No relation between birth cohort and innate ability need be posited to account for the difference. The content of valued knowledge changes over time; the acquisition of such knowledge occurs primarily in the schools; and the time that has elapsed since school-leaving grows shorter for each successive birth cohort.

There are, in fact, curious contradictions that arise between arguments that can be advanced to point up the inadequacy of grades completed as an indicator of education. One line of argument implies that a grades-completed measure overstates change over time in education. The position is taken that the holder of a high-school diploma is a more educated man if he is fifty years of age than if he is twenty years of age because high-school graduates are relatively fewer among the age-mates of the older man. Another line of argument, however, implies that a grades-completed measure understates gains in education. Increases over time in so-called school quality and the in-classroom time per grade have enhanced the educational value of a school year. Neither indictment seems a sufficient basis for recommending

that the grades-completed measure be replaced by a new measure of education, at least in recurring surveys financed with public monies.

SOME FUTURE DATA NEEDS

What must be done to better gauge the trend of education in America? A more judicious arrangement of data collected under existing statistical programs must be assigned top priority. It is the progression of successive birth cohorts through the school system that generates the American stockpile of education. Results of the recurring surveys begin to take on meaning only when they are brought into juxtaposition for a cohort defined by year of birth.

Comparisons between birth cohorts with respect to the rate of school attendance at a given age or with respect to the cumulative schooling completed by a survey date are reported frequently in discussions of educational trends. Instances in point would be the difference between 1950 and 1960 attendance rates for sixteen-year-olds and the difference between mean grades completed by persons aged twenty-five to twenty-nine and the corresponding mean for the thirty-five to thirty-nine age group as of 1960. The most critical intercohort comparison for measuring change in education, however, contrasts the cumulative schooling completed by a given age. That is, are persons better educated now, in 1968, than a decade ago when they reach, say, their teens, their majority, or their fortieth birthday? The answer must be based on the following comparisons: grades (or years of schooling) completed by age thirteen for the cohorts born in 1945 and 1955; grades completed by age twenty-one for the cohorts born in 1937 and 1947; and grades completed by age forty for the cohorts born in 1918 and 1928.

The pressing need is not the collection of new items, but a new tabulation format for old items. Records now on file which include information about enrollment status, grades of school completed, and birth year (or age at the survey date which can be translated into birth year) must be re-examined with a view to compiling as complete an account as is possible on the progress of successive birth cohorts through the school system. As additional records including these items accumulate, the series for each birth cohort can be extended forward in time or made more detailed with respect to the past.

A second priority, far more costly than the first on a long-run basis, is an increase in the size of the sample surveyed periodically with respect to enrollment status and grades completed. On the assumption

that information on these items continues to be collected as part of the Current Population Survey conducted by the Bureau of the Census, the incremental cost probably should not be attributed wholly to "education." Although the information collected on education becomes intelligible only in relation to other characteristics of the respondents, the usefulness of other survey items also is enhanced by the larger sample size. Analysis of the work status of out-of-school youth, for example, is limited by sample size in precisely the same way as analysis of their educational attainment.

In the substantive materials reviewed earlier, some of the analytical uses of statistics arranged by birth cohort and based on samples of adequate size have been illustrated. The thrust of analytical work with closely spaced readings on education should be directed increasingly to establishing covariation between measures of a cohort's progress through the schools and ongoing changes in the society at large.

NOTES

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15. *Ibid.*, p. 101.
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21. The survey and data derived from it are discussed at some length in Blau, Peter M., and Otis Dudley Duncan, *The American Occupational Structure*, John Wiley, New York, 1967; and Duncan, Beverly, *Family Factors and School Dropout*, *op. cit.*
22. Duncan, Beverly, *op. cit.*, Table 3-2.
23. *Ibid.*, Table 4-8.
24. *Ibid.*, chaps. 3, 4; and Duncan, Beverly, "Education and Social Background," *American Journal of Sociology*, vol. 72, 1967, pp. 363-372.
25. Duncan, Beverly, *Family Factors and School Dropout*, *op. cit.*, chap. 8.
26. The analysis is reported in Duncan, Otis Dudley, "Ability and Achievement," *Eugenics Quarterly*, vol. 15, March, 1968, pp. 1-11.
27. This point has been made previously by William H. Sewell, in his review of Coleman, James S. *et al.*, *Equality of Educational Opportunity*, Government Printing Office, Washington, 1966, which appeared in the *American Sociological Review*, vol. 32, 1967, pp. 475-479.
28. Rees, Albert, "The Measurement of Unemployment," in *Studies in Unemployment*, Government Printing Office, Washington, 1960, pp. 18-19.
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30. Duncan, Beverly, *Family Factors and School Dropout*, *op. cit.*, chap. 8.
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V. AGGREGATIVE FEATURES

13. SOCIAL STRATIFICATION AND MOBILITY

Problems in the Measurement of Trend

Otis Dudley Duncan

THE SPATIOTEMPORAL frame of reference for this chapter is the United States since about the end of World War I. For the purpose of sketching movements in the state of opinion on the topic—the first task of the chapter—a further restriction is advisable. We will not miss much that is important in the literature of the interwar period if we take note only of Cooley's "Opportunity and Class" (1918)¹ and Sorokin's *Social Mobility* (1927).² The era of modern research begins with 1942, when Sibley's "Some Demographic Clues to Stratification"³ was published. Cooley and Sorokin are of permanent value (or as near to being so as any sociological writing can be) for conceptual orientation, and are much more useful for the purpose of acquiring concepts suited to the study of specifically American social stratification than are the writings of Weber, Veblen, or Marx. Sibley initiates the characteristic contemporary emphasis on *measurement* as the method of resolving issues that ultimately turn on matters of fact.

The organization of the chapter is somewhat unbalanced. After a quick demonstration that sociologists' views on the character of stratification trends have been neither uniform nor consistent, the chapter turns to a highly compressed conceptual exposition intended to identify what should be the major foci of trend studies. Finally, in the longest primary subdivision of the paper, there is a detailed appraisal of our present capability to measure *one* of the kinds of trends thus identified. The chapter, therefore, is rather less compendious than the whole book that would have to be written to do the topic full justice.

THE TREND OF PROFESSIONAL OPINION

There is no better way to summarize Sibley's argument than to use his own words:

Not universal equality nor near-equality of status but a high rate of vertical mobility has been the most important demographic basis of this nation's tradition of classlessness. The long-existing favorable balance of vertical circulation of individuals in American society, i.e., the excess of upward over downward moves, has diminished and seems likely to be further reduced. Development of class consciousness will be likely to occur unless our social institutions are so readjusted as to produce a large amount of compensating up-and-down movement of individuals. The educational system, which is the chief American institution explicitly conceived as a mechanism for facilitating the ascent of talented individuals, must become more highly selective of individual merit if the loss of certain dwindling sources of upward mobility is to be offset. It must be admitted that there is no criterion of what would be exactly enough vertical mobility to prevent the formation of conscious and hostile classes in our nation, yet in relative terms, it can be shown that there is danger of actual circulation falling short of the critical amount.⁴

Sibley had no data on vertical mobility as such. He was able to point to net shifts in the occupational structure as presumptive evidence that much occupational mobility had occurred in the past. Moreover, he illustratively calculated that immigration, selective of predominantly unskilled persons, and differential fertility resulted in higher rates of recruitment to the bottom than to the top of the social structure, thus engendering upward movement. But if the latter two forces should wane in importance, and particularly if rapid economic growth should not be resumed after World War II, then Sibley foresaw a possibility that our "social arteries" would "become sclerotic."

The more systematic part of Sibley's paper was an analysis of the joint influence of family background and intelligence on educational attainment. After showing that the net importance of the former was far from negligible, particularly as concerns college attendance, Sibley remarked, "It is evident that the American educational system is far from being as effective as it might be in counteracting tendencies toward social stratification." The conclusion depended, of course, on the plausible assumption that educational attainment is a crucial step in occupational achievement.

In contrast to the disciplined conjectures offered in Sibley's paper, some of the professional literature of the subsequent years was more freely speculative. A psychological hypothesis was advanced by Havighurst,⁵ who argued that by the end of World War II people had lost "the old belief in the possibility of social mobility for themselves and their children." He anticipated that in the postwar period there would be a tendency to be satisfied with "group mobility," illustrated by the gains made for workers by labor unions, and that "individual

mobility will become less important to them." The hypothesis, though daring and unsubstantiated, was presented circumspectly: "It must be admitted that the evidence for decrease in the number of people with a strong drive for individual mobility is not completely convincing. We lack some of the facts." Indeed, almost all the facts were lacking. Havighurst contented himself with some quotations from essays written by a few school students in 1942–1943: "The writer was impressed, as he read the essays, with a surprising lack of evidence of personal ambition and drive for social mobility, which he would have expected from high school seniors in his own school days."

A few years later Hertzler argued in the same vein, at greater length and with a wider array of purported documentation.⁶ His conclusion was grim:

In general, there is evidence that the American Dream is becoming less real for many people. . . . In the main, we seem to be "settling" as a people. The strata are becoming more rigid; . . . Status is crystallizing. There is both a tendency toward restriction of access to the means of personal and family advancement, and an apparent reduction in the vertical mobility drive and psyche and ethos.

Hertzler's discussion began by recapitulating Sibley's arguments. It then proceeded by way of a review of various items of poll data to present the "grounds for thinking that the fundamental *psychology* underlying the American Dream of 'climbing to the top' is undergoing considerable change." Here, the orientation that Petersen was shortly to dub "nostalgic Americanism" seems to dominate any tendency to conform to canons of inference. There are absolutely no data on *trends* in this section of the article, yet the author does not hesitate to employ such phraseology (*italics added*) as "*more and more* people covet . . . peace of mind"; "stratum fixity in a labor union . . . is, *increasingly*, . . . sought after"; "*subsiding* of the climbing drive"; "workers *are becoming* 'security-minded'"; "*growing* sympathy with and belief in unionization"; "*waning* interest in long-time goals"; "*growing* feeling among people that they 'might not be able to make it'"; "*growing* complacency regarding status and role." In sum, without any evidence whatever about how things looked to the "predecessors," Hertzler tells us that "The heavens of achievement look quite different to many contemporaries than they did to their predecessors."

One more item from the "rigidification" literature also illustrates how easily proponents of this thesis fell into methodological traps. Hollingshead⁷ evinced an awareness of the requirements for an inference on this matter in acknowledging that "an assay of trends is difficult be-

cause data are not in existence to enable the construction of a satisfactory profile of what the stratification system was during a base period and then to measure another period against the base." He showed less methodological sophistication in approaching the problem of occupational mobility. Here he was limited to a comparison of the 1910 and 1940 occupation distributions in New Haven. His comments on the data tended to minimize the rather substantial differences between the two distributions, but more serious was the introduction of the completely gratuitous postulate, "if the occupational structure is not expanding, particularly in the upper reaches, upward mobility will be restricted to a very small percentage of the population." In all the discussion of *net* changes in the occupational distribution there was not one iota of evidence for Hollingshead's conclusion that "movement into the higher positions in the status system is more difficult today than it was before World War I."

It is easy today to spot the weaknesses in the rigidification thesis that apparently enjoyed much currency between 1942 and 1952. At best (in Sibley's case) stratification trends were not directly measured but were inferred from data on the operation of presumed causes. At worst (in the method of "nostalgic Americanism") "trends" were manufactured out of whole cloth, perhaps by an exercise of the sociological imagination.

After about 1952 the rigidification thesis apparently lost ground. It was subject to several sharp attacks, and there was an increasing supply of relevant—though far from conclusive—data. During the past ten years, authors discussing trends have actually had at their disposal trend data, or have made highly self-conscious use of procedures designed to permit rigorous, if indirect, inferences of trends. A student of the sociology of knowledge might wish to entertain other hypotheses to account for a shift in the "mood" of the profession. Petersen did not hesitate to suggest that

Whenever a conclusion is based on isolated facts torn from their social context, we do well to suspect that the choice of these facts was not haphazard but in line with some prejudice or ideology. In this case, two ideologies that seem to have little in common—nostalgic Americanism and Marxism—have cooperated to create and maintain "enlightened" illusions about the American class structure.⁸

Other critics⁹ writing at about the same time elaborated some cogent themes that had hitherto not been sufficiently emphasized: First, that there is a desperate paucity of hard data suited to the measurement of trends; and second, that the effort to infer trends from the operation

of presumed causes had been handicapped by the neglect of certain social forces operating to relax rather than to intensify rigidity.

Perhaps the most significant item of information to be injected into the discussion at this time was the startling finding reported by Rogoff from her analysis of marriage licenses issued in Marion County, Indiana: "*No significant changes took place in over-all mobility rates between 1910 and 1940.*"¹⁰ All subsequent commentary featured this result in the discussion. Subsequent investigators, appreciating the methodological elegance of Rogoff's research, were constrained to conform to much more exacting standards of inference than had previously been observed.

Lenski's¹¹ ingenious attempt to piece together a trend series from intercohort comparisons had some temporary value until an accumulation of national samples permitted a straightforward assessment of changes in the frequencies of movement between broad occupational categories (white-collar, manual, and farm). In accomplishing this assessment Jackson and Crockett "found scant evidence that the system of occupational inheritance is growing more rigid."¹² Their conclusion pertained specifically to the period 1945–1957. It shortly became possible to confirm it with data extending to 1962.¹³

It cannot be supposed that the rigidification thesis (the sociological counterpart to the economists' contemporaneous "stagnation" thesis?) has been finally laid to rest. For one thing, even if the earlier reading of trends has been shown to be defective and even if prognostications for the post-World War II period have turned out to be excessively glum, there is nothing about a trend—supposing it to have been reliably ascertained for some specific period—that guarantees its own continuation. Sorokin, above all others, had been tireless in his insistence that there is "no perpetual trend toward either an increase or a decrease of vertical mobility."¹⁴

It is true, moreover, that the decisive rejection of the rigidification thesis was accomplished by narrowing the scope of the issue to the question of what had been the trend in intergenerational occupational mobility. Several of the earlier discussions had already emphasized the multidimensional nature of social stratification; and there had been speculation as to shifts in the extent of social inequality, as distinguished from the ease of movement between strata. Thus, while the rigidification thesis in its original form is no longer actively espoused, there is much new talk about increasing "concentration of power" and increasing "inheritance of poverty." Unfortunately, the literature on these topics has not been very explicit on the question of measurement.

Hence to engage in a critique of it one would have to run a considerable risk of setting up straw men to be knocked down.

For present purposes, it is sufficient to acknowledge that the subject of "stratification trends" may well not be exhausted by even the most careful analysis of occupational mobility. In the next section of this chapter an attempt will be made to indicate just how comprehensive a full-blown effort to measure such trends would have to be. But then, in the final section, the material on occupational mobility is re-examined in detail, because it affords the most convenient opportunity to illustrate a host of technical but unavoidable problems that would confront any honest and serious effort to assay the trends in stratification.

STRATIFICATION CONCEPTS

One can share my strong operationalist bias without denying that it is a good idea to think about that which is to be measured before undertaking to measure it. A conceptual digression is included here not for its own sake but as a challenge to the ingenuity of the specialist in measurement.

Process and Product

Some emphasis is to be given to a distinction among functional differentiation, institutionalized inequality, and social stratification.

The very notion of society entails the concept of *differentiation*. A population is functionally differentiated when some of its members regularly do and are expected to do different things (perform different roles) than others. In human society, the division of labor is "occupational" in a broad sense; this implies that role differentiation is predominantly learned, conventional, and habitual. In infrahuman societies, the division of labor may be largely "morphological"—what an organism does depends on what kind of organism it is, as among polymorphic insects. (That age and sex, physical and mental capacities, and the like limit or condition human role differentiation is a complication of this distinction.)

Institutionalized *inequality* exists when, as a matter of more or less consistent practice, different roles are differently rewarded, when their performance confers status distinctions, or when different performances of a given type of role are differentially evaluated. What the rewards may be and how they are assigned are empirical contingencies

to be investigated in particular cases, as is the structure of differentiation itself.

Social *stratification* refers to the persistence of positions in a hierarchy of inequality, either over the life time of a birth cohort of individuals or, more particularly, between generations. The definition implies that a stratified population is one in which there is intertemporal predictability (to a greater than chance extent) of an individual's status at one time, given his status (or that of his family of orientation) at some earlier time. Thus a society is stratified with respect to wealth if a wealthy family's offspring are discernibly more likely to be wealthy than are the offspring of a poor family. The rigidity of stratification, in this sense, is measured by the intergenerational correlation or coefficient of association. This concept is to be distinguished from the degree of inequality, which refers to the extent of differentiation on a relevant scale of rewards (or dispersion of the status distribution). A society might be highly—or even completely—stratified even though inequality is slight, as in the case of a wealthy and a poor class the difference in whose actual holdings is small but membership in which is virtually fixed at birth.

An explanation of the structure of differentiation lies beyond the scope of this discussion, which must be something less than an encyclopedia of sociology. Nor can we linger over the problem of how societies become differentiated. Two processes centered upon functional differentiation are, however, germane.

The first is the process of social metabolism, the recruitment of personnel to roles in a division of labor and the turnover of personnel in such roles, or (if one prefers) the allocation of people to tasks. Among the principal bases of allocation are age, sex, and the "capacities" and "dispositions" of individuals. Without speculating on how allocation on these bases might work in the limiting case of an unstratified society, we can indicate two things that happen as a consequence of stratification. First, position in a stratified hierarchy may be a basis for role allocation (e.g., noble birth may be a prerequisite to political office). Second, capacities and dispositions, insofar as they are produced or developed by training or socialization, may turn up in disproportionate frequencies in the several strata of the stratified hierarchy, given, for example, differential access to educational facilities. To the extent that the basis of capacities and dispositions is genetic, biosocial mechanisms of stratification may have a similar outcome. Both principles amount to the statement that the "qualifications"—however these may be defined, and whether they may be intrinsic or extrinsic qualities of the

individuals concerned—for occupying various roles are not evenly distributed over strata in a stratified system.

The second process linked to differentiation is that of allocation of rewards. It would be possible to construct a formidable list of the mechanisms that may operate in this process: pricing of the services of role incumbents (wages and salaries), legal stipulations of perquisites and prerogatives, customary or conventional patterns of distribution, awards or prizes for performance to a set standard, and so on. Again, the point here is not to attempt a taxonomy of such mechanisms, but to indicate that stratification impinges upon the process of reward distribution. The general principle is that stratification may constitute a bias with respect to the operation of one or more reward mechanisms or devices for conferring status. Perhaps some categories in a stratified hierarchy are simply ineligible for certain kinds of rewards. Or the magnitude of reward for a given performance may be a function of stratum membership.

The account of processes linking differentiation, inequality, and stratification is completed by designating the classes of mechanisms by which social inequality is converted into social stratification: primarily, intergenerational transmission of status and, incidentally, continuity of status over the life span. The latter without the former would generate only a weak and transitory system of stratification; hence the emphasis on intergenerational transmission. In two respects, this concept is given a somewhat broader reference than is usual. First, although the most important case of intergenerational transmission concerns the nexus between achieved status and status of the family, *qua* family, of orientation, it seems economical to include under this rubric such ascribed statuses, derived via the family, as kinship or lineage, racial (as socially defined, of course), ethnic, cultural, or religious group membership. That some of these are not absolutely fixed does not alter the principle that they typically are transmitted intergenerationally. Second, the term “transmission” is not limited to ascription of the identical status of the family of orientation nor to inheritance of its precise position on a status scale. Any positive association or linkage, deterministic or probabilistic, between statuses in the two generations (parent and offspring) conforms with the idea of transmission advanced here. This stipulation eliminates, for example, the insoluble problem of estimating the absolute amount of “occupational inheritance” in a set of data on intergenerational occupational mobility. (It is insoluble because there is no final solution to the problem of the breadth and heterogeneity of categories in a classification of occupations.)

Mechanisms of Stratification

The process of stratification comprises all that is involved in the intergenerational transmission of status and the impact thereof on status achievement and the securing of rewards. There is interest in estimating the parameters of the process as of a given period of time, temporal variations (trends or fluctuations) in these parameters, and the alterations of structure to which these variations may give rise. Such parameters refer to quantitative aspects of any of the mechanisms by which the process operates. Identification of these mechanisms is a preliminary step. The listing that follows is not based on any systematic principle of classification; it is merely a culling from the current lore and observation in the literature of what is usually termed "social mobility."

Ascription. Perhaps the clearest case of intergenerational transmission is simple ascription: status is conferred at birth (or is perfectly predictable at that time) and is the same for the offspring as for the parent. In typological descriptions of a "caste" system it is stated that the son necessarily belongs to the same caste as the father, and neither of them can change his caste membership. In societies with sharply defined "racial" categories, racial status is conferred in this way. A similar principle operates in connections with titular rank, as in the case of "nobility." The estate system of stratification, as it is conventionally described, rests heavily on the principle of ascription, although changes of status are not entirely precluded.

There is some ambiguity about the mechanism of ascription as it operates in reference to what are called "ethnic" or "minority" statuses in the United States. Apart from the more strictly "racial" categories, ethnic groups in this country represent for the most part aggregates identifiable in terms of national origins or religious communities. Such identification, however, is tenuous to a degree in that assimilation and acculturation may render it vestigial. Thus, while the initial status is ascribed, it is not thereby entirely fixed. The situation is one of considerable empirical complexity as well as conceptual ambiguity.¹⁵

Inheritance. Another apparently clear form of transmission is inheritance of real property, wealth, and certain intangibles (such as the reputation of a "fine family"). Our understanding of how inheritance actually works, however, is extraordinarily poor. A normative prescription such as primogeniture breaks down in the not infrequent case that a man dies without heirs. Legal intervention in the form of estate taxes

and the like has resulted in the invention of many disguised forms of inheritance. The capital value of a family name may be squandered before the fact by one who achieves the status of "black sheep."

Genetics. While social status as such is not transmitted by the genes, various personal qualities that serve as advantages or handicaps in status achievement are thought to have a genetic basis. What the relevant qualities are may well be a matter of social definition; thus strength, stamina, and visual acuity may be important traits for achievement in a hunting society while verbal intelligence is critical in a literate civilization. Yet in both cases one may postulate a hereditary basis for the capacity to develop the relevant skills, granted that the development thereof is a contingent matter in itself.

Socialization. Students of American society lay heavy stress on socialization. The circumstances of birth and rearing are thought to have much bearing upon the development of linguistic habits, motives, attitudes, aspirations, orientations, skills, and cognitive resources, which in turn are crucial for status achievement. The rubric socialization may be taken broadly to include not only the inculcation of behavior patterns by the family of orientation but also formal training in educational systems and acquisition of orientations from peer groups and the wider social milieu. Not all agencies of socialization, of course, need reinforce the effects of the others. Thus the school in American society is increasingly being called upon to remedy the effects of "cultural deprivation," i.e., undesirable or dysfunctional socialization by the family of orientation.

Access to Opportunities. The several strata may differ in resources and access to opportunities. Amounts of funds available for education and "improvement" are more or less proportional to income, as are resources to be used in acquiring information about job openings or in undertaking spatial mobility in response to such information. Among the initial conditions confronting an individual by virtue of the circumstances of his birth are his locations in space and time. These may be seen as constraints on access to opportunities. Temporal location (i.e., membership in a given birth cohort) is, of course, unalterable. Geographic mobility, however, may more or less neutralize the advantage or disadvantage of an initial spatial location.

Environments. The strata, similarly, differ in the environments in which they live. Differentials in personal safety, nutrition, health care, and the like may be reflected in persistent advantages or handicaps with respect to subsequent achievement.

Differential Association. The factors of segregation and differential association are perhaps best regarded as conditions influencing some of the foregoing mechanisms. They are, however, sufficiently important (presumably) to merit special mention, partly because they are subject to fairly direct measurement. A special instance of differential association, often studied though not so much in the context of stratification, is assortive mating. All these mechanisms can be viewed, for example, as constraints upon the field of socialization or as limits upon access to opportunities.

Although the foregoing list is probably incomplete, it is clear enough that our conceptual apparatus is better developed than our equipment for measurement. The goal of measurement is to devise models incorporating all the mechanisms of intergenerational transmission and to estimate their relative importance and interrelationships in particular populations. We have only crude and partial approximations, but enough has been done to indicate promising directions for further work.

The order in which the mechanisms of transmission were listed is somewhat suggestive. Evidently the task of social analysis is quite different, according to whether the investigator is concerned with a system with predominantly ascriptive principles or with one in which most statuses are achieved. Assuming that American society falls toward the latter pole, the analyst's task is somewhat like that of one who bets on the races. A stratified society which places stress on achievement is not unlike a race in which the runners differ not only in skill and ability, but also in respect to various advantages or handicaps. Some begin the race with heavy packs upon their backs and many obstacles in their course, while others enjoy freedom from such impediments. The race is rendered less predictable, too, in that these initial conditions may be modified as the contest progresses, not only in response to the success of the contestants up to a given point, but because the handicaps are varied somewhat randomly during the running. The outcome is hardly determinate when the race begins, but an informed bettor could nevertheless make money if his odds were accepted. From a normative standpoint, one can be concerned with whether the race is run fairly, given the rules, or whether the rules themselves should be changed.

The insistence that some notion of a *process* should be central to our concept of stratification may seem idiosyncratic, given the overwhelming emphasis on structural description in the recent American literature on the subject. There are, however, significant precedents for the emphasis that is urged here.

Cooley, for example, wrote: "All societies are more or less stratified into classes, based on differences in wealth, occupation, and enlighten-

ment, which tend to be passed on from parents to children; and this stratification creates and perpetuates difference in opportunity."¹⁶ What is suggested here is that "passing on from parents to children" be taken as the antecedent of "this stratification." "Classes," strata, or other like products of stratification exist insofar as there is more or less continuous and consistent operation of some such mechanisms as have been listed above.

The point of view taken here was expounded even more explicitly by Buckley, who was protesting against the prevalent confusion of social stratification with social inequality and social differentiation. In attempting to convey the force of the distinction, he wrote:

. . . the distinction between stratification and differentiation . . . may perhaps be brought out more clearly by the consideration that a non-stratified society . . . containing no intergenerationally continuous strata: (1) would nevertheless be differentiated in terms of duties, rights, and perquisites, (2) might, without being inconsistent, recognize differential evaluation of roles (though not necessarily of persons), and (3) would still have the problem of training and selecting the new members for the various roles. The classlessness of the society would have nothing directly to do with its differentiation but would be manifested in the fact that a person's initial social position or milieu at birth would not be correlated with his adult social position, except perhaps to the very small extent that current fact and theory allow us to correlate validly the individual's biologically based capacities or talents with his biological background. . . . This is why the several recent empirical studies of *inter-generational* mobility, as distinct from career patterns *per se*, are crucial in establishing the fact and the extent of stratification.¹⁷

Similarly, Svalastoga, although his terminology is not free of the confusion that Buckley discerned, is quite clear as to the conceptual issue: "The permeability of a society, i.e., the degree to which positions are filled without respect to social origin or other characteristics determined at birth, is the most important single clue to its system of stratification."¹⁸ Following this clue systematically, Svalastoga is led to a typology comprising five "models" of stratification: the egalitarian, caste, estate, class, and continuous models. The last is offered as the most relevant to contemporary Western industrial nations.

Forms of Inequality

The preceding discussion relied on the assumption that the analyst of stratification is clear in his own mind as to what are the relevant statuses, the intergenerational transmission of which constitutes stratification. He has, in other words, already made a commitment as to the "what" in the famous question, *Who Gets What, When, How?*¹⁹ But

it is not wholly obvious what that commitment should be. Indeed, much that passes for "stratification theory" consists in a rather unconvincing elaboration of distinctions among forms of inequality.

The present discussion requires no firm resolution of the ambiguities and obscurities that infest the literature on this topic. The presentation here is only illustrative of a range of possibilities. The reader might have preferred Svalastoga's²⁰ classification of "stratification criteria":

1. Social status or amount of deference enjoyed.
2. Political status or amount of power possessed.
3. Informational status or amount of skill or knowledge possessed.
4. Economic status or amount of wealth possessed.

A somewhat more elaborate set of distinctions is attempted in Figure 1. This particular scheme has been found unsatisfactory by several

FIGURE 1. SOME SCALES OF REWARD OR STATUS

<i>Item</i>	<i>Stock or state concept</i>	<i>Flow or incidence concept</i>	<i>Conventional rubric</i>
1.	{ Wealth Assets Property	Income	"Economic" (production)
2.	{ Level of living Possessions	{ Expenditures Consumption Leisure	"Economic" (consumption)
3.	{ Prestige Honor Reputation, fame Esteem	{ Deference Recognition, awards Concern, care, love Moral evaluation	"Social"
4.	{ Education Knowledge Skill	{ Schooling Training	"Informational"
5.	{ Style of life Status symbols Manners Language	{ Psychic income Satisfaction Utility Diversion	"Cultural"
6.	{ Power Authority	{ Influence Decision-making	"Political"
7.	{ Legal status Freedom	{ Exercise rights, choice, participation Experience punish- ment, deprivation, sanctions	"Civic"
8.	Welfare	Life chances	(Composite, summation of 1-7)

critics (who shall remain anonymous but not unappreciated); the only certain thing about it is that it will require much revision.

One unusual feature of the classification merits further consideration in future work even if its presentation here is not entirely successful. This is the attempt to coordinate the two alternatives that appear to exist with respect to the treatment of the temporal dimension. On the one hand, a status variable may be conceived as a "stock" or a "state" that could in principle be inventoried or assayed at a particular moment in time. On the other hand, the variable may be definable only with regard to a "flow" that occurs over some finite interval of time or an "incidence" of events during such a period.

The distinction between stock and flow is conventional with regard to wealth and income (even though many sociologists seem unaware of the convention and its utility, indeed, necessity). Actually, it was the idea of making additional distinctions analogous to this one that inspired the arrangement of Figure 1. Wealth, conceived as a stock of productive (or potentially productive) assets, may by being employed as capital generate a stream of income. Conversely, a stream of income, insofar as it is diverted into saving or investment, may contribute to the growing stock of wealth.

It would not be wise to push this analogy too hard with regard to such concepts as "power" and "influence," especially in view of the extreme latitude in regard to the use of these terms on which the disciplines of social science insist. Nevertheless, the distinction between "state" and "incidence" approaches to measurement is germane here, as is obvious from the controversy that developed over the "reputational" (state) versus the "decision-making" (incidence) techniques of ascertaining who holds power in a community. As it turns out, the two techniques do not have to yield the same results, any more than there has to be a perfect correlation between wealth and income. This complication of life can hardly be welcome, even if we cannot wish it away, because our present techniques of model construction are ill-suited to the incorporation of fine distinctions concerning the way in which variables operate over time.

If we can only conjecture as to the ultimate import of the temporal distinction, it is much more evident what is at stake in the presentation of distinctions as to types of status. Sorokin pointed out:

Not always are the wealthiest men at the apex of the political or occupational pyramid; and not always are the poor men the lowest in the political or the occupational gradations. This means that the inter-correlation among the three forms of stratification [read "inequality"] is

far from being perfect; the strata of each form do not coincide completely with one another. There is always a certain degree of overlapping among them. This fact does not permit us to analyze in a summary way all three fundamental forms of stratification. For the sake of a greater accuracy each form has to be studied separately.²¹

Or, as Spengler phrased the point with characteristic elegance, "Positions on diverse distribution curves cannot, in the absence of arbitrary assumptions, be added and converted into a single position."²²

One consequence of the multiplicity of forms of inequality is to raise the issue of the degree of "rigidity" of a system of rewards and statuses. (This is to be distinguished from the rigidity of the *stratification* system, which refers to the degree to which status is intergenerationally transmitted.) The notion of rigidity with respect to social inequality is that the several reward or status variables may be more or less highly intercorrelated. If the correlation is high, the wealthy always have the most prestige, the greatest power, the most desirable style of life, and so on. If not, there is room for status discrepancy. The idea of rigidity, of course, resembles that of "status crystallization," much discussed in the stratification literature of the past decade and a half. High rigidity (or crystallization) would be generated if all rewards depended in the same way on a fixed set of positions in the division of labor, as the power, prestige, and income of the men in a military organization depend on grade and rank. If one believed—it is not suggested that anyone does or has cause to do so—that all rewards are a function of ownership of the means of production, he would also have to believe that there is great rigidity in the system of inequality (even if, by the way, there were no inheritance of property). There may be considerable rigidity in this sense, even if the extent of inequality is not great (a capitalistic society is not necessarily rich or highly differentiated by amount of riches).

The absence of "occupational status" from Figure 1 may seem surprising. Are we not accustomed to think of "socioeconomic status" in America as a vague composite of education, occupation, and income and "things like that," usually unspecified? But, of course, occupation is a *role*, and it is the rewards of pursuing roles, not the roles themselves, that appear in Figure 1. Occupations differ in regard to earnings (income), prestige, power, attractiveness of working conditions, and intrinsic appeal of job assignments, among other things. Indeed, it is the assumption that occupation is the source of many of the most important kinds of rewards that allows some sociologists to fix upon occupation as the key variable in the American stratification system. But

this involves an ellipsis, albeit a harmless one for the most part. In the sequel there will be occasion to indulge in it so as to refer conveniently to "occupational status" and its intergenerational transmission. The danger in the ellipsis arises when we assume there is some natural "occupational scale," rather than one that arises only if occupations are ranked or graded in terms of one or more of the items listed here.

Measurement and Models

The foregoing discussion implies, or presupposes, a concept of "stratification system." Such a system comprises two analytically distinct components, both essential to the concept: (1) a set of one or more hierarchies of institutionalized inequality with respect to the statuses (rewards, evaluations, prerogatives) conferred on the basis of incumbency and performance of roles; (2) a pattern of intergenerational transmission of status or access to roles such that the position of an individual on a scale of inequality is associated to a nonnegligible degree with the position of his family of orientation.

On this point of view, there is some ambiguity about the statement that, for example, a given society is "highly stratified." This could mean one of several things: that there is a great range or dispersion of values of one or several status variables; that there are strong correlations between pairs of status variables; or that the coefficient of intergenerational status transmission is high. Empirically it may be true that one of these conditions is likely to be realized if and only if the others are also. But it is not logically necessary for them to go together. cursory consideration of illustrative cases suggests, indeed, that they do not always do so. In any event, it is prudent to accept definitions that do not beg questions of fact. We, therefore, reach the following classification of the tasks of measurement in the area of stratification trends.

Degree of Inequality. With respect to each relevant status variable in a society, what is the extent or degree of inequality and how does this change over time? The best illustration here, because of the amount of careful and methodologically sophisticated effort that has gone into the problem, is the measurement of trends in the inequality of the income distribution.²³ Despite this careful work—or, really, because of it—we are not able to offer any simple and unequivocal summary statement as to trend. Much depends on the income concept that is used as well as the method accepted for measuring the inequality of its distribution. Although it would be entirely appropriate to do so in the

present context, no attempt will be made to review the several alternative concepts of inequality; the relevant literature is voluminous.²⁴ As for the conundrums that bedevil the measurement of income per se, it is well that we have this example of an ostensibly simple operation that turns out to be very complex indeed.

It is unlikely that measurement of other status variables will prove to be simpler in the end. (See, for example, the discussions of measurement in the chapters on welfare and education in this volume.) Of course, for several kinds of status—most notoriously, perhaps, “power”—we simply do not have as yet even a plausible beginning on the task of measuring the variable and the inequality of its distribution. But if the analogy with income is worth anything, it may suggest that even casual talk about “concentration of power” might be more carefully disciplined by adhering to a distinction between the aggregate or average amount of power in a system and the inequality of the distribution of power. One sometimes has the strong impression that those deploring the alleged increase in concentration of power are mistaking an increase in the total amount of power in the society for a heightening of power inequality. In the case of income, a rise in the average seems to be a prerequisite for a decline in the concentration (the same need not necessarily be true of power, of course).

Rigidity of Inequality. The second task of measurement presupposes that there are two or more significant forms of inequality or status variables. The question is, then, to what extent are these inter-correlated, or what is the degree of rigidity of inequality or degree of status crystallization, and in what direction is the rigidity of inequality changing? In some respects, this problem may be somewhat simpler than the previous one, at least if one is willing to accept a measure of association that does not make strong assumptions concerning the metric of the variables being correlated. Thus, even with only a crude grading of degree of power—one for which a rigorously defined measure of dispersion or inequality would not be applicable—one could calculate the association of, say, power and wealth. If comparable data could be had for successive points in time, rudimentary inferences as to trend would be possible.

Although sociologists have given much attention to status crystallization during the past fifteen years especially, there is really little in the way of substantial opinion, let alone actual measurement, on the subject of trends. Hollingshead's article recorded his conclusion that “compartmentalization is becoming more rigid with the passage of

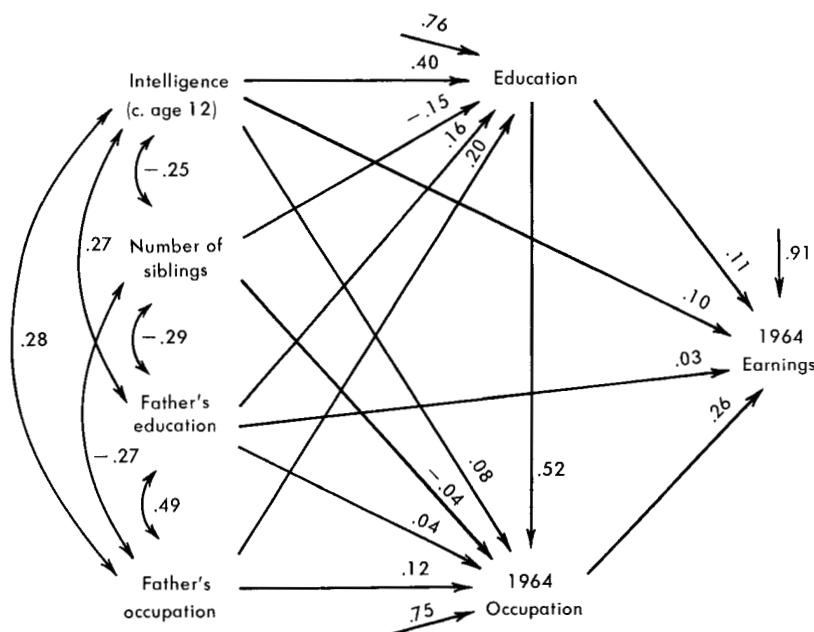
time"; but it was not wholly clear from his discussion what patterns in his limited data he took to be critical in reaching this conclusion. Most of the work on status crystallization has been concerned with its consequences for personal orientations and behavior, as inferred from cross-sectional data; little has been done to ascertain the degree of crystallization in the society at a given point in time, not to mention changes therein over time.

Rigidity of Stratification. The third question addressed to the specialist in measurement concerns the degree of rigidity of stratification and the trend therein. It is assumed in this chapter that the question concerning the "stratification trend," if posed without further qualification, really refers to this third problem. Hence, it is this problem that has been chosen as a vehicle for the extended illustration of problems in trend measurement in the last section of this chapter.

The program implied by the foregoing classification would appear to be formidable enough and the increment to knowledge that would result from its realization substantial enough that we should not complicate it still further at this point. Nevertheless, it is well to remember that trends are merely the raw material of social analysis. The successful measurement of conceptually distinct trends will only heighten the demand for analysis that discloses their empirical interrelations. Having a notion of how this may be done, moreover, will affect the way we go about trend measurement in the first place. It will be urged here, as in a previous publication,²⁵ that the compilation of social indicators and the assessment of the trends they reveal should proceed at the same pace as the construction of models contrived with the intention of interpreting interrelationships among indicators.

Indeed, to the extent that plausible models of the whole process of stratification can be developed and means of estimating their relationships can be found, the problem of trend measurement can be restated as that of detecting changes in the parameters of the process. If, for example, we had models adequately taking into account the several "mechanisms" of stratification listed earlier, we should be interested in ascertaining shifts over time in the relative contribution of each mechanism to the outcome of the entire process. Given this way of looking at stratification trends, a program for trend measurement would specify that successive birth cohorts would be followed through their life cycles and observed periodically to establish whether significant differences emerge in comparisons of recent with earlier cohorts in respect to any of the parameters of a model.

FIGURE 2. PATH DIAGRAM REPRESENTING DEPENDENCE OF ACHIEVED STATUSES ON FAMILY BACKGROUND AND INTELLIGENCE



NOTE: Path coefficients estimated for white men 25 to 34 years old in 1964; see source for details of estimates. Coefficients less than .02 in absolute value are not shown.

SOURCE: Duncan, Otis Dudley, "Ability and Achievement," *Eugenics Quarterly*, March, 1968, pp. 1-11.

Just to illustrate the possibility envisaged here, Figure 2 displays one model of the process of stratification that has emerged from recent research.²⁶ The coefficients in this model have been estimated for only one cohort: white men in the United States aged twenty-five to thirty-four in 1964. (Actually, certain data used in making the estimates do not pertain strictly to this particular cohort, so that the statement just made is an idealization of our present statistical capability.) Waiving questions of the adequacy of the particular model exhibited here, the proposition advanced is that a fully developed program for measuring stratification trends might well provide for the quinquennial estimation of the parameters of such a model for five-year birth cohorts. To ac-

complich this with due regard to reliability of measurement and adequate control of sampling error would be no mean task; but the task is technologically feasible. If we seriously want to know the answer to such questions as "Are Social Classes in America Becoming More Rigid?"²⁷ and "Is America Still the Land of Opportunity?"²⁸ we can hardly be satisfied with less.

Stratification and Class

The entire chapter to this point has skirted issues suggested by the concept of "class" or "social class." The last section of the paper will likewise eschew a confrontation with such issues. There are two main reasons for this bias in the treatment of the subject. First, the concept of "class" is often used in such a way that it means little more than the imposition of more or less arbitrary intervals on the scale of a status variable, as when poverty is defined as having an income below \$3,000 per annum, whereupon the analyst imperceptibly insinuates "lower class" as a synonym for those "in poverty." An incredible amount of paper and ink has been wasted in presenting factitious solutions for the artificial problem of where "class boundaries" really belong. "Class" in the sense of a statistical "class interval" is merely a nominal category of greater or less analytical convenience. The virtually irresistible temptation to make something more of it is reason enough to forego employment of the term in a treatment of social stratification.

More significantly, the framework advanced here has deliberately omitted reference to "class" because that concept does open up a range of genuine problems requiring a different orientation and set of techniques from those suggested by the generally demographic approach to stratification exemplified in this chapter. These problems may be summarily identified as those relating to, first, accommodative relations between social strata; second, the growth of "class consciousness," or awareness of common or like interests on the part of people similarly situated in a stratification system, and third, the emergence therefrom of individual, mass, and collective action oriented to conflict over class interests. As the latter problem is followed up, it is seen to merge with more general problems concerning conflict, social movements, and social transformations that may indeed result in modifications of the stratification system as here defined—for example, in regard to the character of the division of labor itself, the bases and mechanisms of status conferment, the degree or pattern of intergenerational status transmission, or the mechanisms of role allocation.

The distinction between stratification and class implicit in these re-

marks conforms fairly well with the usage urged by Dahrendorf: "*Class* is always a category for the purposes of the analysis of the dynamics of social conflict and its structural roots, and as such it has to be separated strictly from *stratum* as a category for purposes of describing hierarchical systems at a given point of time."²⁹ Acceptance of such a distinction would not deny the possibility of important interactions between stratification systems and patterns of class relations—interactions that would become particularly salient given an interest in long-run sociopolitical evolution of societies and the dynamics of major social transformations. The kind of program for measuring stratification trends suggested in this chapter clearly should be complemented by parallel studies of "class trends" in American society; and these two kinds of complementary research should ultimately be synthesized in a more general theory of social and political change. These tasks are not only beyond the scope of this chapter and the competence of this writer; they constitute an agenda for the future of sociology rather than one on which substantial progress is currently being made.

MEASURING THE TREND IN SOCIAL STRATIFICATION

As has been indicated already, the detailed illustration of measurement problems will refer to only one segment of a program for measuring stratification trends. The point of departure is the assertion by Svalastoga that "the permeability of a society . . . is the most important single clue to its system of social stratification."³⁰

Sociologists and social statisticians have been studying what Svalastoga calls "permeability" for some time, with varying degrees of effectiveness. The studies are usually presented as investigations of so-called "social mobility," most often "intergenerational occupational mobility." For several reasons, both methodological and substantive, I feel that Svalastoga's formulation conveys the emphasis I would prefer to the one usually placed on "mobility." In a society where most of the statuses that entitle a person to socially valued and distributed rewards are, in fact, achieved (rather than ascribed) statuses, the crucial question is what factors determine the level of achievement, not whether achievement involves a person in "mobility" from the status level of his social origins. Moreover, mobility statistics are treacherous, especially in a multivariate context. If you try to explain "mobility," it may easily turn out that your results are an uninterpretable compound of actual causal influences and artifactual regression effects. There is no

need to expound this point here, as it has been dealt with elsewhere in detail.³¹

Several problems must be solved in order to arrive at an estimate of the past trend of social stratification in the United States or to propose a program for following the trend in the future. These may be listed summarily, by way of introduction; a more extended consideration of details will follow.

1. We require a conceptual orientation that will lead to criteria for the measurement of stratification.
2. Pertinent data must be located or created.
3. It must be established that the data for successive periods of time are sufficiently comparable, so that intertemporal differences can be taken to signify change rather than mere fluctuation in errors of measurement or variation in study design.
4. The intertemporal comparisons must be inspected for evidence of secular trend or other identifiable temporal pattern.

Concept and Measurement

A commitment on this problem is already implied in the opening lines of this section. The degree of stratification—or the degree of “rigidity” in the stratification system, if one prefers to think of it that way—refers to the extent to which the level of status achievement depends upon the level of social origin. If there is much intergenerational transmission of status, a society is highly stratified; if there is little, the degree of stratification is low. To reiterate, a society need not be highly stratified merely by virtue of the existence in it of much inequality of social rank. Rank may be highly differentiated, but if there is roughly equal access to unequally ranked positions, the society is not highly stratified, within the meaning of the term as it is used here.

Our problem, therefore, is to measure the relationship or association between achieved statuses and origin statuses. If for the moment we limit the problem to that of analyzing the conventional intergenerational occupational mobility table, the problem is to fix upon an indicator or indicators of the degree to which a son's occupational status depends upon that of the father.

Some analysts have chosen to emphasize the extent to which sons remain at the same status levels as their fathers, or experience so-called “occupational inheritance.” This is a rather inadequate measure of what we want, even if the analysis is complicated by relating the observed inheritance to the amount expected on a null hypothesis of no

association of statuses in the two generations. The main reason that this measure is inadequate is that the amount of "occupational inheritance" one can observe is strictly a function of the nature and number of occupational categories recognized in a given classification scheme. A second reason for rejecting this approach is that "inheritance" of either a fairly broadly defined occupational status or a relatively specific occupational title does not comprehend everything that we wish to understand by transmission of status between generations. The son's status may depend upon that of the father to a degree, even if the son ends up in a different classification. (I seriously doubt the generality of results that appear to imply the contrary.)³²

While devotees of so-called nonparametric statistics may be tempted to turn to one of the measures of association that do not require the assumption of interval scaling, I believe a strong case can be made for treating the problem as one concerning the association of two quantitatively scaled variables: father's status and son's status. Surely we do not wish to go so far as to employ a measure that does not at least make use of what we know about the social grading of occupations. Indexes of association that assume only a nominal scale of measurement misrepresent the nature of the problem fully as much as an index that rests on an overly strong assumption of an interval scale. Moreover, it is significant to note the high degree of convergence of the several efforts at scaling occupations.³³ If we accept one of these scales for reasons of convenience, we can have some confidence that we are at worst dealing with a monotonic transformation of the "true" measure of occupational status (whatever that might be).

On the line of argument sketched here but amplified elsewhere,³⁴ I am led to the choice of classical regression statistics as the preferred method of measuring the intergenerational association of statuses. At least some of the assumptions of these statistics can be checked. Fears that the regression would turn out to be markedly nonlinear are found, for example, to be groundless.³⁵ For better or worse, therefore, it will be assumed in the sequel that most of what we want to learn from an intergenerational occupational mobility table can be summarized by the linear correlation and regression coefficients. Perhaps the most compelling reason for making this decision is the ease with which one then can proceed from the bivariate to the multivariate problem.

Data

Again taking occupational status as the type case, we can quickly indicate the deplorable state of affairs with respect to availability of

data on intergenerational mobility. National data with any legitimate claim to adequacy have been in existence for no more than two decades. The renowned study of occupational prestige conducted by the National Opinion Research Center (NORC) in 1947 included questions on respondent's and father's occupation, and the statistics derived from this survey have been cited fairly frequently. Close inspection reveals, however, that either the use of a quota sample or anomalies in occupational coding, if not both, rendered the intergenerational mobility information highly suspect.³⁶

Various national surveys conducted by the Survey Research Center (SRC) during the 1950's for other purposes incidentally included questions on father's occupation. The data becoming available in consequence have provided some useful indications of mobility patterns, but I have detected discrepancies in the distributions of fathers' occupations as given by SRC and the 1962 study of Occupational Changes in a Generation (OCG) for matched cohorts that are too large to attribute to chance. It appears that the SRC data are not sufficiently comparable with data collected and processed by the Bureau of the Census to warrant close comparisons. A sufficiently ambitious project, which would involve complete recoding of original schedules in SRC files, could provide valuable indications of the intergenerational relationship for terminal dates such as 1952 and 1957. Indeed, a systematic canvass of the archives of national surveys taken in the past fifteen years would no doubt reveal enough information, if properly processed, to establish trend values for this recent period with reasonable confidence.

The current standard for surveys on this topic is the 1962 OCG study, executed by the Bureau of the Census as a supplement to the March, 1962, Current Population Survey. Here, for the first time, is a survey of intergenerational mobility of high technical quality that covers a sufficiently large sample to permit reliable estimates for important subpopulations as well as the national total. To some extent, as will be indicated, stratification trends can be studied by internal analysis of the OCG data. But this is evidently no substitute for the interperiod comparisons that are the basic stuff of trend analysis.

In default of national data for earlier periods, we turn perforce to the few substantial community surveys of sufficiently high quality to merit sustained attention. Rogoff's well-known analysis³⁷ of marriage license applications for periods centering approximately on 1940 and 1910 was based on records secured in Marion County, Indiana, of which Indianapolis is the principal urban center. Occupational coding was done with exceptional care, and the basic data were published in

considerable detail. There is every reason to believe that the statistics compare favorably in quality with those derived from surveys.

The Six-Cities Study of Labor Mobility, carried out in 1951,³⁸ is a veritable mine of information for the selected populations covered in that study. Unfortunately, the preoccupation with labor mobility, at the expense of an interest in social stratification, meant that the data were underexploited from the point of view of our present interest, a deficiency that has, thus far, been only partially remedied by secondary analyses.

Finally, reference is made to the series of Detroit Area Study (DAS) projects that have included from time to time the requisite questions on occupational background.³⁹ The writer was associated with the 1966 project to the extent of ensuring that the occupation coding was sufficiently detailed and reliable to permit comparisons with the other sources mentioned.⁴⁰ The size of the sample is a rather important limitation of this source, as it is for the Six-Cities data, unless resort is made to the perhaps questionable tactic of aggregating the cities.

Comparability of Data

The first substantive presentation of statistics will concern the sets of data just reviewed: Rogoff's information for Marion County, 1910 and 1940; the Chicago data from the Six-Cities study for 1950, partially extended back to 1940 in virtue of the ten-year work histories that the study included; the 1962 national OCG data; and the 1966 DAS information for Detroit and environs. Unfortunately, resources have not been at hand for the reworking of materials in the SRC and possibly other data archives.

Several steps have been taken to secure comparability—or as close an approximation thereto as is possible—with respect to certain significant factors in social stratification. First, the calculations in Tables 1 and 2 are for white men only; except for the Marion County series, where small minorities of the sons were foreign-born, there is a further limitation to native white men. In all cases sons of farmers and farm laborers are excluded. Since the urban community studies must be very selective in their coverage of men with farm background—excluding in the nature of the case those remaining in farm occupations—this restriction is virtually dictated. While it leaves us with only a partial view of the past, it is a view that may be especially interesting as a benchmark for future trends, since in the future larger and larger proportions of the national population will have nonfarm origins. Finally, some care has been taken with the age classification, because the

TABLE 1. CORRELATION BETWEEN SON'S AND FATHER'S OCCUPATIONAL STATUS,
FOR NATIVE WHITE MALES WITH NONFARM BACKGROUND:
SELECTED DATES AND AREAS, 1910-1966

Line no.	Area and age group	Year						
		1966	1962	1950	1940	1930	1920	1910
(1)	Marion County, Indiana (marriage license applicants)	—	—	—	.385	—	—	.407
(2)	Detroit (1966); U.S. (1962), Chicago (1950 and 1940), by age	(Det.)	(U.S.)	(Chicago)				
	25-34	.272	.353	.293	.347	—	—	—
	35-44	.286	.390	.314	.344	—	—	—
	45-54	.409	.378	.300	.241	—	—	—
	55-64	.296	.354	.301	—	—	—	—
	25-64	.312	.371	.304	—	—	—	—
(3)	U.S., urbanized areas, by size (men 25-64)	—	—	—	—	—	—	—
	1,000,000 and over	—	.352	—	—	—	—	—
	250,000 to 1,000,000	—	.399	—	—	—	—	—
	50,000 to 250,000	—	.374	—	—	—	—	—
	U.S., other urban (men 25-64)	—	.357	—	—	—	—	—
(4)	Son's occupation in terms of first job, U.S.	—	—	.371	.366	.387	.394	—
	(age in 1962)	—	—	(25-34)	(35-44)	(45-54)	(55-64)	—

NOTES AND SOURCES: Line (1). Age distributions, in percentages, for 1940 and 1910 respectively are: Under 24, 36 and 40; 24 to 30, 37 and 36; 31 and over, 27 and 24. Data include foreign-born sons, 3 per cent in 1940 and 10 per cent in 1910. Original data from appendix tables, Rogoff, Natalie, *Recent Trends in Occupational Mobility*, Free Press, Glencoe, Ill., 1953; correlations computed in Duncan, Otis Dudley, "Methodological Issues in the Analysis of Social Mobility," *Social Structure and Mobility in Economic Development*, Smelser, N. J. and S. M. Lipset, editors, Aldine Publishing Co., Chicago, 1966, chap. II. Line (2). *Detroit*: Unpublished data from 1966 Detroit Area Study, directed by Howard Schuman and Edward O. Laumann; sample of 815 men aged 25-64 covers suburban territory as well as Detroit. *U.S.*: Occupational Changes in a Generation survey, U.S. Bureau of the Census, March, 1962; covered population includes a negligible number of nonwhites other than Negroes. *Chicago*: Data (for central city only) from "Six-Cities Survey of Labor Mobility," as analyzed in Duncan, Otis Dudley, and Robert W. Hodge, "Education and Occupational Mobility: A Regression Analysis," *American Journal of Sociology*, vol. 68, May, 1963, pp. 629-644. 1940 data are from retrospective reports for the same sample as the 1950 data, with age lagged 10 years. Sample for 1950 data includes 1,105 men 25-64 years old. Lines (3) and (4): OCG; includes nonwhites, except Negroes.

TABLE 2. REGRESSION OF SON'S ON FATHER'S OCCUPATIONAL STATUS, FOR
NATIVE WHITE MALES WITH NONFARM BACKGROUND:
SELECTED DATES AND AREAS, 1910-1966

Line no.	Area and age group	Year							
		1966	1962	1950	1940	1930	1920	1910	
(1)	Marion County, Indiana (marriage license applicants)	—	—	—	.389	—	—	.381	
(2)	Detroit (1966); U.S. (1962), Chicago (1950 and 1940), by age	(Det.)	(U.S.)	(Chicago)					
	25-34	.295	.396	.308	.349	—	—	—	
	35-44	.275	.417	.307	.324	—	—	—	
	45-54	.443	.401	.286	.230	—	—	—	
	55-64	.269	.378	.282	—	—	—	—	
	25-64	.316	.402	.298	—	—	—	—	
(3)	U.S., urbanized areas, by size (men 25-64)	—	.377	—	—	—	—	—	
	1,000,000 and over	—	.413	—	—	—	—	—	
	250,000 to 1,000,000	—	.408	—	—	—	—	—	
	50,000 to 250,000	—	.393	—	—	—	—	—	
	U.S., other urban (men 25-64)	—	—	—	—	—	—	—	
(4)	Son's occupation in terms of first job, U.S. (age in 1962)	—	—	.390 (25-34)	.350 (35-44)	.370 (45-54)	.370 (55-64)	—	

NOTES AND SOURCES: See Table 1.

Indiana data are limited to men of marriageable age. Discrepancies remain on this score, however, although it is not clear that they represent a serious impairment of comparability.

In regard to factors beyond direct control, some inferences are attempted in the hope of bolstering confidence in comparisons. The Detroit and Indianapolis data cover territory suburban to the respective central cities, while the Chicago data do not. Bearing in mind the selectivity of suburban migration in the postwar period, we may well entertain doubts as to the legitimacy of a comparison of Chicago with either of the other two cities. The 1962 OCG data, however, are available in a breakdown into central cities vs. suburbs of all urbanized areas of 1,000,000 or more population. The father-son correlation differs only in the third decimal place when the central cities are compared with the entirety of the urbanized areas. What happens is that the correlation is lower in the suburbs than in the central city, but the between-area component of the correlation for urbanized areas almost exactly compensates for this difference.

Another legitimate concern is the difference in city size between Detroit and Chicago, on the one hand, and Indianapolis on the other. Again, a breakdown of the OCG data by size of community (see Tables 1 and 2) provides an estimate of this effect, which we may possibly wish to consider as a correction in the comparison. The difference in the father-son correlation between the size class that includes Detroit and Chicago and the one containing Indianapolis is very close to the difference between the 1940 Chicago correlation for men twenty-five to thirty-four years old (which is the nearest approximation to the age range of the 1940 Indianapolis data) and the Indianapolis correlation.

Another factor that may be equally or more important than the respondent's age is the time reference of the inquiry on father's occupation. In the marriage license data, father's occupation presumably refers to the time at which the license is applied for; hence the fathers are comparatively advanced in age. In the Six-Cities data, the time reference is ambiguous, for the question stipulates "father's longest job." In the OCG and DAS data, the reference is to the father's occupation at the time the respondent was about sixteen years old. I believe this is the preferable form of the question for the purposes at hand, inasmuch as it provides a reading on social origin of the respondent that is proximate in time to the crucial decisions and contingencies that will have a large bearing upon his own occupational achievement. Nonetheless, we are quite uninformed as to the extent to which the

other types of question may yield information comparable to this one. My own guess is that the distortion is slight, but I have fairly little evidence except the finding that over a ten-year period men's occupational statuses are sufficiently stable to produce an interannual correlation of .77 for men forty-five to fifty-four years old in the 1951 Chicago data.

Another source of noncomparability is that in the OCG data, in contrast to the other sources, the occupation of the family head other than the father was used in place of father's occupation, in the event that the respondent was not living with the father at age sixteen. In all the studies, there are appreciable proportions with father's occupation unknown. This proportion was doubtlessly increased in the Indianapolis data, in view of the fathers' advanced ages, if applicants made no report on deceased fathers.

Several of the problems of comparability already mentioned arise in rather acute form when we juxtapose line (4) of Tables 1 and 2 with the other lines. In line (4), the report on son's occupation pertains not to his occupation at the time of the 1962 survey but to the occupation he identified as his "first job" (after being instructed not to count part-time jobs during schooling, jobs held during school vacations, or military service). The time reference is rather nonspecific, since the age interval includes ten years; and the age at first job, averaging around eighteen, is also rather variable. The dates against which the coefficients for the four cohorts are shown are merely the approximate centers of rather extended periods over which the experience actually occurred. Nonetheless, intercohort comparisons here do provide a valid indication of trend, if the retrospective reports can be trusted, while intercohort comparisons of occupation in 1962, shown in line (2), do not, for in the latter case the cohorts are not even approximately equivalent in length of working force experience.

I have devoted more space to the possibility of errors arising from noncomparability than is usual in a discussion of trends. This is not because I believe that the present problem is one in which such problems are unusually severe—quite the contrary. The distressing truth is that we devote all too little concern to the *sine qua non* of comparative analysis: the demonstration that the materials being compared are indeed sufficiently comparable for the purpose at hand. Among other things, a livelier appreciation of the impact of errors produced by noncomparability could provide motivation for the strenuous efforts that are needed to effect comparability by standardization of study design and operational concepts.

Comparability: Structural Considerations

Further delaying comment on the possible inferences as to trend afforded by Tables 1 and 2, we should consider another kind of problem in comparability that is sometimes posed as a virtually insuperable obstacle to the drawing of such inferences. In view of the well-known changes in the occupational distribution of the labor force, the emergence of new jobs and obsolescence of old ones, changing skill and educational requirements for jobs with the same nominal titles, shifts in annual salaries and earnings rates due to unionization and other factors, changes in the demographic composition of occupational categories, and so on—in view of all these changes, is there any real meaning in the comparison of father-son correlations for periods separated by several decades? I am unable to cite a coherent published exposition of this line of criticism, but I have encountered it so often in informal communications that I am sure it is no straw man.

A preliminary separation of issues is required. In the first place, unquestionably the occupation structure, in the sense of the relative numbers in the several occupations, has changed markedly in the past several decades. The general nature of the changes is well known. If we were to focus our inquiry on *mobility*, unquestionably changes in occupation structure, in this sense, would have to be reckoned as a cause of the redistribution of opportunities for achievement—although, as I have had occasion to point out at length elsewhere, it is by no means obvious how we are to take structural change into account in analyzing mobility.⁴¹

Our interest here, however, is not in mobility as such. (The reader who is interested in this way of looking at social stratification is referred to careful reviews of the evidence appearing elsewhere.)⁴² The concern here is, to reiterate, with the question of the extent to which a man's occupational achievement may depend on the level of occupational status that we identify as his origin. It is perfectly conceivable that occupational opportunities might expand, in the sense that relatively more high-status jobs are opening up, without there being a change in the intergenerational correlation. Indeed, this is presumably a part of the explanation for the mean shift between generations that we observe in a regression analysis—the average occupational status of sons is typically higher than that of fathers. (Another factor in this effect is that "fathers" are usually represented in a sample in proportion to the number of sons that they have, so that differential fertility induces a downward bias in the mean estimated for the "father's gen-

eration.") But the approach taken here places emphasis on the regression slope or correlation, not on the mean difference between generations.

If this stipulation is accepted, there remains the question of whether we are entitled to regard "occupational status" as a fixed attribute of an occupation title, so that, say, a physician or a plumber in 1930 had the same status as his counterpart in 1962.

The scale of occupational status used throughout the present analysis is one based on census information for 1950 and opinion-poll data for 1947. For each detailed census title, the scale score is a weighted average of the percentage of men in the occupation who were high-school graduates in 1950 and the percentage with 1949 incomes of \$3,500 or more. The weights were chosen in such a way that, for a selection of 45 detailed occupations, they afforded optimal prediction of the percentage of respondents in a national poll who assigned the occupation an "excellent" or "good" rating.⁴³

The issue, specifically, comes down to the question of whether occupational status, scaled in such a fashion, is sufficiently stable over time as to permit meaningful intertemporal comparisons of intergenerational correlations. Conclusive evidence on this point is not at hand, but strong presumptive evidence of stability can be adduced.

First, consider occupational prestige. Prestige studies have been made from time to time over a period of several decades. Robert Hodge, Paul Siegel, and Peter Rossi, the most prominent contemporary students of the subject, recently reviewed the accumulation of evidence and concluded, "There is . . . no evidence whatsoever of any substantial changes in the over-all structure of prestige."⁴⁴

In the upper part of Figure 3, I have manipulated the data assembled by Hodge, Siegel, and Rossi to represent variation in occupational prestige scores over time as a simple causal chain which accounts for the correlations between the scores given to occupations in four studies conducted, respectively, in 1925, 1940, 1947, and 1963. The version of this chain given here differs slightly from one presented elsewhere.⁴⁵ Here I have, as it were, taken the earliest study as the benchmark and considered how subsequent readings of prestige have diverged from it. Hence the estimates of path coefficients for this diagram were obtained from the following equations:

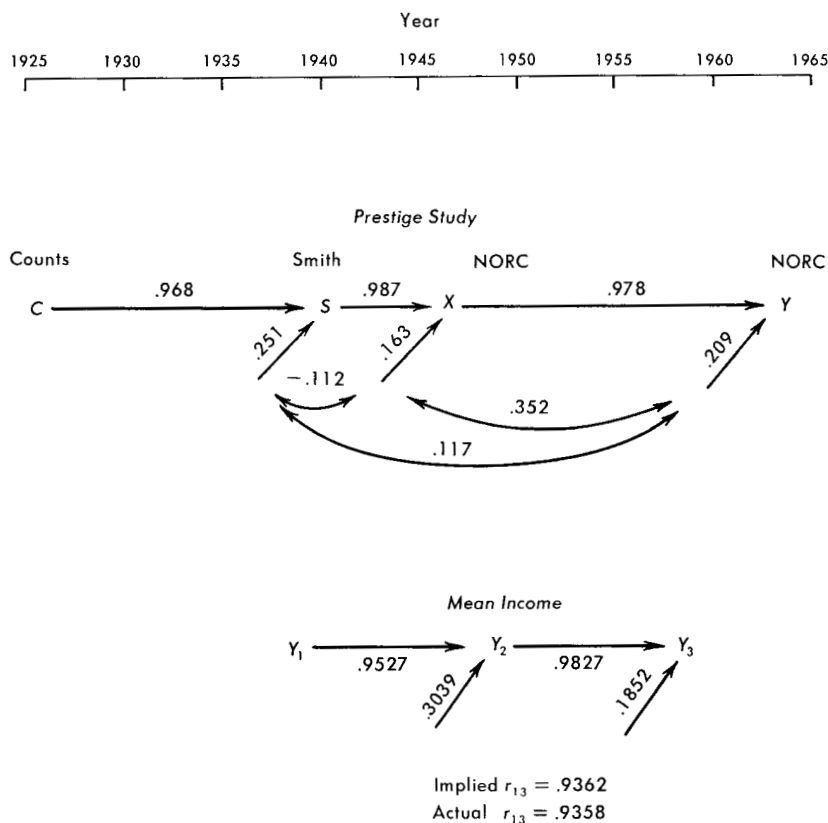
$$p_{SC} = r_{SC};$$

$$p_{SC}p_{XS} = r_{XC}; \text{ hence } p_{XS} = r_{XC}/p_{SC};$$

$$p_{SC}p_{XS}p_{YX} = r_{YS}; \text{ hence } p_{YX} = r_{YS}/p_{SC}p_{XS}.$$

The assumption of this method of estimation is that the residuals (or

FIGURE 3. CAUSAL CHAINS REPRESENTING PERSISTENCE OF PRESTIGE AND INCOME DIFFERENCES BETWEEN OCCUPATIONS



SOURCE: Derived from Hodge, Robert W., Paul M. Siegel, and Peter H. Rossi, "Occupational Prestige in the United States, 1952-1963," *American Journal of Sociology*, vol. 70, November, 1964, pp. 286-302; and Miller, Herman P., *Income Distribution in the United States, A 1960 Census Monograph*, Washington, 1966, Table C-6.

"disturbances") for variables S , X , and Y are uncorrelated with C , but not necessarily with each other. In this rudimentary model, such disturbances are a compound of at least three factors: (1) unreliability of measurement, which is presumably exceedingly small, inasmuch as prestige scores are averages of ratings supplied by a large number of

respondents; (2) actual "shocks" to the prestige structure, such as might be occasioned by a relative downward shift in the reputed wages of an occupation or modifications in its public "image"; (3) differences in technique between studies. It has been found⁴⁶ that differences in techniques of collecting ratings and scoring them have a surprisingly small effect on the outcome, but it is relevant, nonetheless, that the two NORC studies represent a virtually exact replication, while the two earlier studies used techniques differing from each other as well as from NORC.

It is interesting to note how closely the path coefficients estimated for this model correspond to the simple correlations between adjacent sets of scores. Thus, by assumption, $r_{SC} = p_{SC}$; $r_{XS} = .982$ as compared with $p_{XS} = .987$; and $r_{YX} = .990$, while $p_{YX} = .978$. The model thus represents the exceedingly high correlation between the two NORC studies as due in part to the replication of technique, rather than to any lessening of the impact of random shocks to the prestige structure with the passage of time. The effect of similarity in technique is reflected in the positive correlation, .352, between the disturbances of Y and X . Neither of the other two correlations between disturbance terms, at an absolute value of about .1, is statistically significant, in view of the small number of occupations that can be compared between the respective studies.

Perhaps the most striking single datum in the collection of information summarized in Figure 3 is that the correlation between prestige scores in two studies separated by as much as thirty-eight years is no less than .934. We can state the import of this figure in the following way. Suppose that a sample of fifty-four-year-old men are reporting their own current occupations and the occupations their fathers held at the time the respondents were sixteen years old. Suppose further that both occupation reports are scored on a prestige scale constructed in the year of the survey and that the correlation between son's and father's occupation comes out as .40. We might then argue that if the fathers' occupations had been scored on a scale of prestige as of thirty-eight years ago, the correlation between the "true" value of father's occupation at that time and the value as we have scored it today would be .934. Hence, we should correct or adjust the father-son correlation to the extent of $.40/.934 = .4283$.

The essentially trivial nature of this adjustment is seen from two circumstances. First, in any practicable sample survey, the sampling error of an obtained correlation is likely to be at least .02 or .03. Second, we know from census reinterview and matching studies that occupa-

tion reports themselves are far from perfectly reliable. One estimate, for example, places the reliability coefficient at .861.⁴⁷ Hence, correcting an obtained correlation for attenuation by reporting error (assuming independence of the errors in reports of father's and son's occupation) would entail a larger adjustment than any reasonable correction for intergenerational shifts in the prestige value of occupations.

So much for prestige. Figure 3 also summarizes data on stability in the income positions of 118 occupations for which census data on mean wage and salary income have been assembled by Miller.⁴⁸ Again, the model of a simple causal chain seems appropriate. If we merely take the two correlations referring respectively to the decades 1939-1949 and 1949-1959 as the path coefficients, the correlation implied by the chain model for the twenty-year period is .9362 as compared with the observed value of .9358. On this evidence, we should conclude that income positions of occupations are slightly less stable than prestige scores. This comparison would only be warranted, however, if the same set of occupations were used in both cases. Inasmuch as the income data are much more representative of the entire occupation structure than are the prestige data—where ratings are available only for selected occupations—the alternative conclusion is that the income series reflect somewhat more accurately than the prestige series the actual stability of occupational status.

Finally, we may adduce one further finding. For 118 occupations Hodge computed the percentage of men who were high-school graduates in 1940 and 1950, and found the interannual correlation to be .97.⁴⁹ Hence, educational levels of occupations are much like prestige scores and income levels in regard to intertemporal stability.

The findings just reviewed are substantively significant in their own right. From the standpoint of the methodological issue that motivated their introduction here, these findings mean, in few words, that we are *not* measuring occupational status with a rubber yardstick. The implication of the disturbance terms, with path coefficients on the order of .2 or .3, and with relatively low intercorrelations of disturbances, is that in each period the occupational status structure is subject to a fairly small "random shock" and that such shocks cumulate over time. Hence the structure, if it continued to evolve under these conditions, would gradually drift away from its initial configuration to one which bore no resemblance thereto, in much the same way that a simple Markov process leads to a distribution over system states that does not depend on the initial distribution. Yet, on the estimates now availa-

ble, this would take quite a long time. If the prestige structures separated by thirty-eight years are correlated to the extent of .934, those seventy-six years apart will still be correlated as highly as $(.934)^2 = .872$. We shall not be in too much trouble on this score if it ever becomes possible to compute reliable intergenerational correlations between grandfather and grandson.

Interpretation of Results

As the reader has guessed by now, this discussion mostly concerns how to measure stratification trends and not the results of such measurement. But we are, at last, ready to discuss the substance of Tables 1 and 2, though not without alluding to a few more technicalities in the process.

The first thing to note is that small changes or differences in father-son correlations are not always in the same direction as those in the regression coefficient for son's status on father's (compare Tables 1 and 2). For example, the correlations, taken literally, suggest a slight decline in stratification in Marion County between 1910 and 1940, while the regressions change in the opposite way. In neither case, of course, is the change large enough to be taken seriously, even if statistically significant.

The second point is that all our care in seeking to effectuate comparability cannot overcome the uncertainty inherent in the confounding of time changes with alterations in the spatial unit for which data happen to be available. It may be true, as one noted student of stratification once averred, that "All America dwells in Jonesville," but statisticians are still well-advised not to accept statistics for Jonesville, Indianapolis, Chicago, or Detroit as estimates of national parameters, or vice versa. Discounting the likelihood of any pronounced change over so short a period as 1962 to 1966 (especially inasmuch as we give evidence shortly of stability of national estimates between 1962 and 1964), it is plausible that the difference between U.S. in 1962 and Detroit in 1966 is due to the contribution of between-area covariation to the national correlation, inflating it by comparison with the correlation for one locality.

The same argument would allow us to suppose that national correlations in 1940 and 1910 might well have been higher than the corresponding figures for Indianapolis. This does not strictly follow, however. The only thing that is made reasonably sure by the algebra of covariance is that the *average* within-locality correlation will be lower than the national correlation. Perhaps Indianapolis was a locality with

a higher correlation than the average locality. At any rate, it falls in a size group with a slightly higher correlation than the nation as a whole.

It would be easy to persuade me that, of all the six communities in the Six-Cities Study, Chicago is the one most likely to be comparable with Detroit. If we assumed that the two places are interchangeable, the data would suggest the most minute increase in stratification between 1950 and 1966, though one that is not consistently in evidence for all age groups. At present, however, there is simply no way to assess comparability; and even if there were, we are plagued by substantial sampling errors. An unpublished re-analysis of the data for all six cities,⁵⁰ makes it clear that time changes, 1940 to 1950, in the Six-Cities data are swamped by the variation in sample estimates between age groups and places.

Only lines (1) and (4) in the two tables, therefore, provide reasonably firm estimates on which to base a conclusion about trend. As already noted, the Indianapolis data suggest that no appreciable change occurred between 1910 and 1940. The national data on first jobs for successive cohorts indicate the same thing. (Once more it is pertinent that the correlation and regression coefficients do not tell precisely the same story about the differences between cohorts.) The national data on first jobs bring forward the evidence to a somewhat later date than is available for Indianapolis. Thus, the best information we have suggests that no change occurred in the rigidity of stratification in America between 1910 and 1950. (Remember, of course, that none of the conclusions of this chapter is taken to apply to groups explicitly excluded from the analysis, most notably, females and Negroes; relevant evidence for these groups is far weaker than for white males and essentially nothing can be said about trends within these classifications.)

I personally feel that the best guess we can make from the remaining data in the two tables is that the period of no trend in degree of stratification extends to 1966. This hunch had best be left as a hypothesis to be verified subsequently. The replication studies called for at the end of this paper could settle the matter, or at least would have a good chance of doing so.

Intercohort Comparisons

Although most of the preceding analysis concerns interperiod comparisons, one intercohort comparison of data collected cross-sectionally was included: the correlation of first job with father's occupation. Several other such comparisons will now be examined. Of course, we

are here using a cross-sectional but retrospective data-collection procedure in an attempt to reconstruct the past in such a way that intercohort differences validly represent time changes in the experience of successive cohorts. We must be careful to discriminate between items for which this kind of inference is permissible, given confidence in the retrospective data, and those for which it is not. Efforts to infer mobility trends from cross-sectional age data on the contemporaneous experience of different cohorts⁵¹ must be rejected.

Exercises in intercohort comparison will be limited to data from the OCG survey. This survey includes not only occupational data, but also information on educational attainment, which is extremely relevant to the problem of measuring stratification. Hence, Tables 3 and 4 present a selection of correlations taken to be either direct measures of the degree of stratification or of mechanisms involved in the process of stratification. By happenstance, correlations are available for two alternative age classifications. Hence, we are alerted to the possibility that intercohort differences may arise from essentially arbitrary choices as to the grouping of birth dates, given sampling variability in the basic data. Thus, the second line of Table 3 might suggest a slight increase in the father-son correlation with respect to educational attainment (an increase of .03 from the two oldest to the two younger cohorts); but the second line of Table 4, for an alternative age classification on very nearly the same population, betrays no such symptom of trend. In addition, Table 4 incorporates two series that just happen to be available for females. The idea is not to attempt any analysis of female achievement as such, but merely to call attention to the lack of synchronism in the fluctuations over cohorts for men and women. I interpret this to mean that such fluctuations in the correlation between education and father's occupation or between education and number of siblings are merely evidence of sampling variation rather than any indication of time-specific causes of variation in the degree or process of stratification.

Indeed, the very considerable amount of data compactly summarized in the two tables appear to tell a monotonously repetitive story: none of the series shows reliable and regular increases or decreases in the magnitudes of the correlations such as we should expect if stratification were steadily becoming more or less rigid in the United States during the period around World War I up to about a decade ago. It is possible that sufficiently circumspect analysis would succeed in identifying meaningful patterns in the fluctuations, of the sort, say, that could be attributed to the Great Depression or the impact of

TABLE 3. CORRELATIONS BETWEEN SELECTED STRATIFICATION VARIABLES FOR NATIVE NON-NEGRO MEN 25 TO 64 YEARS OLD IN THE EXPERIENCED CIVILIAN LABOR FORCE, TOTAL AND NONFARM BACKGROUND, BY AGE: MARCH, 1962

Population and variables	Age in 1962			
	25-34	35-44	45-54	55-64
<i>All men</i>				
Father's occupation, father's education	.49	.51	.45	.51
Education, father's education	.42	.42	.39	.39
Oldest brother's education, father's education	.44	.47	.45	.51
Education, father's occupation	.42	.44	.45	.39
Oldest brother's education, father's occupation	.41	.44	.36	.44
Education, oldest brother's education	.56	.54	.57	.53
Education, number of siblings	-.35	-.34	-.34	-.29
First job, father's education	.33	.34	.30	.31
First job, father's occupation	.39	.40	.42	.43
First job, number of siblings	-.29	-.26	-.24	-.24
First job, oldest brother's education	.38	.36	.33	.44
First job, education	.58	.53	.56	.56
<i>Nonfarm background</i>				
Father's occupation, father's education	.49	.53	.49	.53
Education, father's education	.40	.40	.37	.35
Oldest brother's education, father's education	.42	.45	.44	.50
Education, father's occupation	.41	.43	.45	.39
Oldest brother's education, father's occupation	.38	.44	.38	.48
Education, oldest brother's education	.54	.51	.54	.54
Education, number of siblings	-.33	-.33	-.30	-.28
First job, father's education	.31	.34	.31	.30
First job, father's occupation	.37	.37	.39	.39
First job, number of siblings	-.27	-.26	-.20	-.25
First job, oldest brother's education	.35	.34	.34	.47
First job, education	.59	.55	.56	.56

SOURCE: Unpublished tabulations from Occupational Changes in a Generation survey, U.S. Bureau of the Census, March, 1962.

World War II. The reader is at liberty to conjecture such interpretations, but after repeated inspection of these data, I find none that is wholly plausible. If a repetition of the OCG survey should find the same pattern of intercohort differences, giving us greater confidence in their reliability, then more effort might profitably go into this kind of interpretation. In the meanwhile, it is salutary to remember that the standard error of the correlations in Table 3 is usually of the order of

TABLE 4. CORRELATIONS BETWEEN SELECTED STRATIFICATION VARIABLES FOR SPECIFIED POPULATIONS OF MEN AND WOMEN, BY AGE: MARCH, 1962

Population and variables	Age in 1962						
	27-31	32-36	37-41	42-46	47-51	52-56	57-61
<i>Native white civilian men</i>							
Father's occupation, father's education	.45	.48	.50	.46	.44	.42	.50
Education, father's education	.40	.39	.42	.39	.39	.42	.42
Education, father's occupation	.41	.43	.47	.40	.46	.39	.44
Education, number of siblings	-.36	-.30	-.36	-.31	-.34	-.34	-.25
<i>White women, married, spouse present</i>							
Education, father's occupation	.40	.35	.37	.39	.35	.30	.41
Education, number of siblings	-.31	-.33	-.30	-.28	-.25	-.21	-.30

SOURCE: Data for men from Duncan, Beverly, *Family Factors and School Dropout: 1920-1960*, Cooperative Research Project No. 2258, U.S. Office of Education, University of Michigan, Ann Arbor, 1965, Tables 3-2 and 3-3; data for women from unpublished OCG tabulations for wives of men in OCG sample.

.02 or .03, not to mention the errors arising from varying fractions of nonresponse to particular questions.

In summary: *no trend*. The OCG data permit estimates of some parameters of the process of stratification that are astonishingly near to being invariant over the experiences of successive cohorts completing their schooling and entering the labor market during the period, roughly, 1920–1955.

In the case of one of the correlations, that between father's education and fathers' occupation, we have a somewhat different measure, that of the extent to which the occupational achievement of mature men depends on their prior educational attainment. This too appears to be nearly constant over time. However, there is an intergenerational difference which indicates the contrary. For all the four cohorts of OCG respondents themselves, the education-occupation correlation is in the range .56 to .64, appreciably higher than the corresponding correlation for "fathers." The comparison is strained, however, because "fathers" in a retrospective intergenerational study do not represent a real cohort, but rather a curious aggregate of men appearing in the sample in proportion to the number of sons they happen to have. Even the inference that educational attainment has been an increasingly important factor in occupational achievement, therefore, had best be regarded as tentative, even though it is compatible with various stray bits of evidence and received opinion. (There is no question, of course, that the occupational structure has been educationally "upgraded," but that is not the issue in the present discussion, which has to do with differential occupational achievement among the members of a cohort.)

PROSPECTS FOR TREND ANALYSES

The exercise in temporal comparisons summarized here is somewhat reminiscent of the experience others have had with international comparisons of occupational mobility.⁵² Some differences between nations appear in the raw data, but the more careful the attempt to ensure real comparability, the less certain the differences seem to be. Such differences as do withstand scrutiny from a technical standpoint are not easily or convincingly explained on empirical or theoretical grounds. The simple fact may be that we are, in comparative studies and trend analysis, extending our research techniques into a region in which they cannot yield trustworthy results. So little effort has gone into calibration and standardization of technique that we cannot be

sure what the marginal return to a *serious* effort to achieve comparability would be.

I am able, however, to report a single (more or less unplanned) effort at pure replication with respect to the subject matter at hand. The OCG survey already referred to was carried out by the Bureau of the Census in March, 1962. Two and one-half years later, in October, 1964, the Bureau carried out a survey for another purpose that included some items parallel to those in OCG. The two surveys not only shared a common technique of sampling; the administration of the questionnaires was handled in much the same way. We can inspect a set of correlations from the two studies computed for very nearly comparable populations: native non-Negro men twenty-five to thirty-four years old in 1962, and all white men twenty-five to thirty-four in 1964. There is, of course, an approximately 75 per cent overlap of the two cohorts in the population, although the two samples are quite distinct. Table 5 shows the correlations for items treated in closely similar

TABLE 5. INTERCORRELATIONS OF STRATIFICATION
VARIABLES IN TWO SURVEYS: ABOVE DIAGONAL,
1962 OCG; BELOW DIAGONAL, 1964 CPS-NORC

Variable	Variable (see stub)			
	V	X	U	Y
Father's education (V)	—	.491	.420	.349
Father's occupation (X)	.487	—	.419	.388
Respondent's education (U)	.407	.429	—	.644
Respondent's occupation (Y)	.336	.391	.637	—

NOTE: 1962 data for native non-Negro men 25-34 years old in experienced civilian labor force; 1964 data for white men 25-34 years old. 1962 data from OCG supplement to March, 1962, Current Population Survey; 1964 data from supplement to October, 1964, Current Population Survey, tabulated by National Opinion Research Center.

fashion in the two surveys. It is gratifying to observe that the largest difference between the two sets of correlations does not exceed .013 in absolute magnitude. If we assume that there should have been no appreciable real change during this brief interval of time and that the uncontrolled impairments to comparability are really negligible, these findings may stand as a demonstration of the reproducibility of correlation estimates secured with the technique being used. Actually, we might have expected some larger differences on the basis of sampling errors alone, although the effect of constancy in sample *design* would be to reduce such errors.

Inverting the proposition, we are now in a position to argue that any real change in degree of stratification, or in correlations between variables implicated in the process of stratification, provided the change is large enough to be interesting, can be detected by repeated surveys, provided there is rigorous standardization of concepts, scales, and survey techniques. Thus, I would urge that high priority be given to a replication of the OCG survey in 1972 (to take advantage of the convenience of a ten-year interval). In all relevant particulars, the survey should repeat the procedures used ten years earlier. This would not preclude experimentation with new questions, alternative measures of occupational status, and so forth, provided that these are handled as additions to the replication and not as substitutes for it. Such additions in the case of the 1964 repetition evidently did not impair comparability. If, by 1972, for example, it appears desirable to experiment with a new scale of occupational status, this can be done along with the repetition of the use of the old one, at the relatively small cost of dual recoding.

Second priority, in a program to measure stratification trends, might well be given to a 1971 replication of the Six-Cities Survey of Labor Mobility. Again, a mere "re-study" without *serious* intent to replicate would merely result in "interesting" data, not in trend measurement. Even with every effort to replicate, the comparison might yield somewhat equivocal findings, given the modest sample sizes used in 1951. However, if at least four of the original six cities were covered again, the problem of sampling errors should be manageable.

A third proposal would depend on the feasibility of recovering and recoding schedules in data archives, to capitalize on the various ad hoc measurements of intergenerational mobility that have been made in connection with studies on other topics. Several points would have to be established: that the original data are of sufficiently high quality to merit lavish attention; that sampling and field procedures came up to a sufficiently high standard; and that the data archives contain enough auxiliary information not elsewhere available to present unique opportunities for analysis. Should the verdict be positive on all these counts, it would then be pertinent to ascertain whether future replication studies, designed for comparability with archival data, would stand a chance to render useful estimates of trend.

Finally, if there should be interest in the long-term historical trend, it would be possible to explore the possibilities in repeating and extending Rogoff's *tour de force*. I have no informed opinion as to the outcome of feasibility studies along this line and suspect that, in any

event, higher priority will be given to studies that monitor future trends rather than those concerned with the more and more remote past. There is, nevertheless, much concern these days with measurement problems in historical investigations, and it would be premature to discount the possibilities.

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14. WELFARE AND ITS MEASUREMENT

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CONCEPTS AND MEASURES

WELFARE IS A summing-up concept—appropriately placed at the end of a volume on social change. Growth in population, changes in technology, in work and play, in family relations and social organization (or disorganization) all have welfare aspects. A large part of the meaning of welfare is to be found in the issues surrounding the questions “how much,” “what quality,” “for whom,” that must be asked with respect to each separate component of social life and social change. But this cannot be the total meaning. For these parts are interacting and potentially conflicting. And the human mind—no matter how sophisticated—persists in wanting to know whether conditions in general are better or worse, while the policymaker must ask which emphasis or which choice will contribute most to the general welfare.

Whether welfare in this general sense can ever be measured is highly doubtful. Like positive health, welfare may be impossible to define in operational or policy terms. Indeed, at this level of abstraction, the two concepts are almost indistinguishable. Without fundamentally changing the concept, the term “welfare” could be substituted for the word “health” in the World Health Organization definition of positive health: “Health (read Welfare) is a state of complete physical, mental and social well-being and not merely the absence of disease and illness” to which one might add a final phrase, such as “or the absence of poverty and social disorganization.” This is not to say that the idea of welfare has no meaning. But because the meaning is value-laden and complex, the social scientist can hope to discover only symbolic indicators and proxy measures.

Measurement is feasible and significant along two main axes. One is the axis of productivity and abundance. An increasing quantity and quality of all the elements that make up the level of living is a basic aspect of welfare. Whatever caveats there may be with respect to the negative effects of overindulgence, closely scheduled activities, loss of

open spaces, and other accompaniments of technology and economic growth, there is no doubt that the net result thus far has been a gain in individual welfare. It is possible that failure to control international conflict and population growth may reverse the balance. Other negative effects—environmental pollution, for example—may be more easily corrected, in part from the products of further growth. Nevertheless, the Gross National Product and its derivative per capita personal income remain among the basic measures that can serve as proxy welfare indicators.

The second major axis—and perhaps the most distinctive for an approach to the measurement of welfare—is that of distribution. From whatever reference point, and in whatever specific context the idea of welfare is introduced, it carries an overtone of equity and social justice. The general concept of fairness in the distribution of whatever goods, services, or life chances the society can offer seems to have an almost universal acceptance as a goal if not in practice. Notions as to what is fair and just obviously differ among individuals in different circumstances, among societies in different stages of economic and political development and over time. But the preference for an equitable society is deeply rooted.

The two axes—abundance and distribution—intersect at many points. As has frequently been observed, inequalities of wealth and power are greatest in poor and partially developed economies. Increasing productivity and modern technology make possible a more equitable and less concentrated distribution. And at least at certain stages of economic growth, they also require mass consumption. Even in a highly developed economy, economic growth generally contributes more to distributional welfare than would any conceivable redistribution of the existing aggregate output of the economy. In the expanding economy of the 1940's in the U.S., all groups shared in the general gains; but the young, the old, women, and unskilled workers shared to a much greater extent than the average. General growth was an equalizing factor. In the decade of the 1950's, on the other hand, growing unemployment hit hardest among the younger workers and among those with the lowest incomes. The general slowdown in the economy meant the end of a trend toward lesser inequality.

In a longer historical perspective, the relationship between economic growth and changes in the distribution of income may take on a different form and involve somewhat different institutional forces in later as compared with earlier stages of economic development. Industrial expansion and agricultural progress, which result in an increased supply

of basic consumer goods at lower prices, translate directly into improvements in the living conditions of those at the bottom of the income scale and to a lessening of inequality. In the later stages of technological development and particularly with the dominance of large urban concentrations of population, the translation is accompanied by more constraints and depends in much greater measure on social action and governmental intervention. The actions taken by government (or foundations or large businesses) with respect to urban housing and transportation, environmental sanitation, and the availability of medical services, for example, increasingly affect the distribution of the products of economic growth. At the level of economic development of the U.S. today, the direction of future economic growth is critical, and equality and inequality become issues that must be faced explicitly and in an increasing number of contexts.

Distribution may also become a more important issue as the general level of living expands. Wants and aspirations respond to what is seen to be possible. Equity, in whatever way it is perceived by the current generation, becomes a condition of political and social stability.

Equity, of course, does not necessarily mean equality. Some inequality is necessary to provide economic incentives to produce, although our knowledge as to the effects of different types of incentive or disincentive (earnings differentials, progressive taxation, power relationships, status and symbolic rewards) is limited. And while there is a fairly general concern that the trend toward a less unequal distribution of income in the United States appears to have come to a standstill in the past two decades, there is certainly no consensus as to how far a shift in the direction of equality "should" go—either from the point of view of fairness of rewards or optimum motivation. Tibor Scitovsky notes that "We have yet to devise machinery whereby consumers or citizens could express their preferences between a small addition to income and a slight easing of conscience over the inequality of man."¹ It is possible, however, to measure distributional elements without complete agreement on a definition of equity.

If we are not sure as to the desirable shape of the total distribution curve, we can perhaps come closer to agreement on certain cut-off points or negative welfare indicators. The current interest in poverty measures is an example of this approach, and one which will be discussed in some detail later in this chapter. This idea of a boundary zone between acceptable—indeed desirable—variations in status and functioning and conditions which social policy should not accept can be applied in many different areas. Some unrest, some family disorganiza-

tion, some school dropouts, some poor health, some unemployment, some crime are inevitable, and inevitably greater in a society undergoing rapid change, but there is a point or line at which one can say this is "too much"—i.e., this is a sign that corrective social action will have net positive effects. As in so many of the problems with which social scientists deal, every individual may have his own firmly held ideas—in this case, as to where the balance tips. These ideas may be among the data which the social scientist has to build into his models. It seems reasonable to assume that there are tipping points that may themselves change over time, but that it is part of the task of analysis to help locate them. Such points may then help to define a social minimum that becomes part of an operational definition of welfare.

The idea of a social minimum has a long history, both in philosophical discourse and in reform movements. The relation of this concept to the general concept of equity may be particularly relevant to currently important issues of social policy. Kenneth Boulding has suggested that the concept of social justice encompasses two different ideas. One he calls disalienation—the idea that no one should be alienated from the society in which he lives, that everyone should enjoy equality before the law, and religious and racial equality. The second idea is that of desert—in a just society each individual will get what he deserves. One way in which society reconciles these two dimensions of justice is by establishment of a social minimum, with individual desert given play above this minimum.² This formulation leaves open the question of how individual desert is defined or determined. It is possible that conflicts over the valuation of individual merit or individual contributions to society will be less sharp when there is a general conviction that those at the bottom are assured at least of the necessities of life.

So long as necessities mean largely subsistence needs, the distinction between a social minimum concept and a measure of the over-all degree of inequality can be fairly clear-cut. As the general wealth of a society and the goods and services which are perceived as necessities increase, the distinction becomes somewhat blurred. The higher the poverty level in absolute terms, the more critical becomes the question of the distribution of real income both below and just above the level. The social minimum which gains solid public and political support at any given time will certainly be related to and largely bounded by the existing distributional patterns in the middle-income levels.

The general level of income and welfare affects distributional problems in another way. To the extent that necessities consist primarily of food, clothing, and other items produced and effectively distributed by

the private market economy, the measurement of income inequality can focus on money income. The value of home-produced food and services was a more important qualifier of money income as a measure of welfare at the turn of the century than today. (The qualification continues to affect international comparisons, particularly between more and less developed countries.) A more significant factor in the measurement of distribution and welfare today is the increasing number of goods and services—of current necessities—that can be generally available and equitably distributed only as a result of public action. One can exaggerate the extent of change. Education has for well over a century been regarded as a necessity that must be publicly provided, but this consensus was not arrived at without sharp social conflict. Eminent domain has always played a part in the distribution of land and capital. Research and technology, however, have made certain basic services—notably medical care—much more expensive as well as much more important. At the same time the growth of population and the pressure of people into cities have made goods that were once “free”—clean air, quiet, and privacy—obtainable only at a price. Public services and governmental decisions thus become more important in the evaluation of equity and in the range of social policies relating to welfare.

PROBLEMS OF MEASUREMENT

Defining What Is Distributed

The argument up to this point has been intentionally cast in general terms. The thesis is that in an industrialized country like the United States the level and distribution of income provide the most useful over-all measure of welfare that has yet been devised. The question of what is meant by income and to whom it is distributed (the individual or a defined family group) as well as the reference period, have been largely avoided. They must be faced before one can begin looking for trend data or outlining a theoretical framework in which to place the available data.

The relevant literature is so voluminous³—and the unsolved questions so numerous—that it is difficult to know how to get a hold on the problem. It might help to start with some didactic propositions.

If the basic purpose is to measure change in over-all welfare, we must look for an indicator that lends itself to repeated use and to the provision of meaningful trend data. An indicator in this context is not intended to mean one series of figures. It does mean an interrelated set of measures, not just a congeries of statistical data. Several different

methods of summarizing the income distribution measures may be appropriate and desirable. The basic measures should be usable as a classificatory scheme for the analysis of the distributional effects of all the components of economic and social change. Supplementary measures will be needed for specific analytic purposes. They may lead to refinements in the basic measure or simply to better understanding of its limitations and its meaning.

Money Income. From this perspective, perhaps one can turn to the obvious starting point—current money income—and ask how useful for an analysis of welfare is the distribution of money income alone. I would argue that it is considerably more useful than much current discussion implies, largely because of the degree to which it is related to other factors that affect the way people are able to live and their control over their life situation.

Recent attention to the problems of the poor has highlighted the fact that ability to use income may in some circumstances be almost as important for the level of living as the amount of income itself. The availability of credit at reasonable terms, access to decent housing, knowledge of where to buy and what to buy can stretch dollars while slum conditions shrink them. As in a number of other relationships, however, there appears to be a high correlation between the amount of money income and the ability to use it effectively. Efforts to improve the purchasing power of the poor through better access to the market and lessened discrimination of all kinds are highly desirable. In the end, the amount of money income may prove to be the critical factor.

From time to time, the suggestion has been made that distributional equity should be measured in terms of consumption rather than income. Quite aside from problems of measurement over time, current consumption is not a good measure of the distribution of welfare, because there is no satisfactory way to take account of individual tastes and choices. For certain types of consumption, notably food, it has been possible to develop accepted standards of minimum adequacy. Housing is another area in which actual physical condition—that is, consumption—may be a more reliable indicator of a level of living than income, at minimum or below minimum levels. But the minimum is only one part of the concept of equity and welfare.

The extent to which the distribution of money income may be accepted as a valid indicator of welfare can be better assessed after considering what kinds of correctives one might want to make were it feasible to do so. Most important are various types of nonmoney in-

come and assets and wealth. The latter brings in the question of the time-scale over which income, however defined, is measured.

Nonmoney Income. Considerable attention has been devoted to the definition of nonmoney equivalents of money income. At an earlier period one of the obvious and important factors in any comparison of farm and nonfarm incomes was the value of home-grown food or home-produced clothing. Trends over time are affected by the treatment of such items. While their importance is declining as agriculture becomes a quantitatively less important occupation and the money economy extends to the farm, they cannot be entirely disregarded. Of a different character is the imputed value of the use of owner-occupied dwellings or of consumer durables. The latter concept approaches a wealth-income measure. It is important for certain kinds of economic analysis, but may not be essential for a welfare-distribution indicator because of the relation between current money income levels and the quantity and value of durables possessed.

The U.S. National Income Accounts include the estimated value of wages in kind and the estimated net rental value of owner-occupied homes in the income total. Hence distributions of family income derived from the National Income Accounts accept this definition. Most household survey data, on the other hand, attempt no such imputations and measure essentially money income.

While the National Income Accounts include an estimate for wages in kind (primarily the value of meals or company-owned housing provided by the employer) they have not attempted to measure certain other forms of private compensation that may be of growing importance. Expense accounts, help in the purchase of a home, stock bonuses, advanced education and training, private pension plans—all benefit disproportionately the higher-income groups. Our knowledge as to the aggregate value and distributional effect of such forms of compensation is very limited. This is an area where much more work is needed.

Nonmoney income is by its very nature a highly circumscribed type of income—it may increase the level of consumption of a particular category, but it is not available for other uses. The welfare significance of nonmoney income is probably quite different at low than at high money income levels where adequate choice is already assured.

Public Expenditures. The growing importance of public expenditures and their close tie to social welfare policy make it desirable to look specifically at this sector. A sizable part of current government

expenditures goes for transfer payments. In cash transfers, society is distributing money income. Such payments are included in all estimates of money income. For various analytic purposes it is important to know what proportion of personal income arises out of various types of income-maintenance or income-support programs. On the consumption side, however, this is money like any other money, which can be spent as the individual chooses—within the constraints imposed by his personal circumstances and the total amount of income available to him.

Most if not all transfer payments have a specific distributional purpose. The largest of the existing programs, the national system of Old-Age, Survivors, Disability and Health Insurance (OASDHI), involves primarily a lifetime distribution of income to assure continuing income flows during periods when the head of the family is out of the labor force. Because the retired aged, the disabled and their families, and younger survivors constitute a sizable proportion of the total population, it also has a significant effect on the current distribution of income. The other existing large transfer payments, public assistance and veterans pensions (but not veterans compensation), are entirely oriented to current income.

Society has decided that certain goods and services must be made available through mechanisms other than those of the marketplace. Some, like education and, increasingly, medical care, are regarded as being so essential that no one can be left without the opportunity (and even the obligation) to acquire them. The benefits of such consumption extend beyond the individual to society as a whole. Others involve a kind of stand-by collective benefit—such as parks, open spaces, libraries, museums, opera, and theater—for all of which there may be user charges, but for which the return to the initial capital investment is diffuse. Public utilities such as urban transportation, water supplies and sewerage systems, and, increasingly, pure air, may involve public subsidy as well as use of the police power or the power of eminent domain. Even general law and order may have distributional elements.

The distribution by money income classes of the value of, or of expenditures for, publicly provided services involves a large number of theoretical as well as empirical problems. Public education is intended to be available for all. The value (cost) of the services may, however, vary greatly from school to school and neighborhood to neighborhood, with the lesser value too often associated with poor neighborhoods and families. On the other hand, the imputed addition to income will be proportionately greater the lower the family income, although the abil-

ity to take advantage of the service may be much less. Similar problems of quality and use arise in relation to health services, whether provided or paid for by public funds. Recent findings that educational success depends more on family and cultural background than on the quantity or quality of schooling provided raise a question as to whether a "correction" of the money income distribution to take account of the redistributive effect (downward) of public education really improves the value of the measure as a welfare indicator. This is not to say that society and social scientists should not be vitally concerned with the relative expenditures on education and on health for different groups in the population. Nor is it to question the importance of sophisticated analyses of the net effect of taxes and public expenditures on different income classes. It does suggest that the distribution of money incomes is itself a very meaningful measure. At least at the lower end of the income scale, what is needed may be not correction through the addition of assumed values for nonmoney income, so much as interpretation through reference to other analytic data.

If this is accepted for public expenditures that have a direct social welfare purpose, it is even more true of general community services. For such services there may be no conceptual gain (for welfare analysis) from attempts to distribute either availability or use across all income classes. These are the areas either where individual choice (of modes of transportation or recreation, for example) should play a major part or where the benefit derived (e.g., pure air) is not divisible. This is not to say that society should not be concerned with such questions as the general character of the urban environment, or whether public transportation is really available to the poor, or whether police and fire protection is adequate in all neighborhoods. These are in a sense subissues, which may help us understand and interpret more general measures. They probably have considerable bearing on the question of the optimum degree of equality, and the most appropriate level of the social minimum. But our knowledge of interrelationships is still too limited to indicate how they should be weighted into an over-all distributional index.

A general measure of the distribution of government expenditures would have to include also the subsidies to special groups—the merchant marine, the oil industry, farmers—or the special credit or other advantages resulting from loan guarantees and subsidized interest rates—for suburban housing or higher education, for example. In the case of loan guarantees there may be virtually no net cost to the government; the aggregate cost of subsidies can be estimated. An attempt to

trace the distributional effects of some of these benefits leads into even more controversial areas of economic theory than those skirted earlier. For many the general direction of the effect, however, is clearly to shift the income distribution toward the higher income levels.

"Total Income." One general observation may be worth making with respect to all attempts to develop an inclusive income figure. All such attempts involve imputations that rest on more or less arbitrary assumptions as to dollar values and as to incidence. The inclusion of items which are fairly equally distributed among money income classes automatically makes the distribution of total income less unequal.

Furthermore, as Dorothy Brady pointed out in one of the early analyses of income size distribution, an individual or family whose income is 80 per cent nonmoney and a family with the same total income all in the form of money are simply not in the same situation or welfare category.⁴ To put the point another way, the school child who can get a school lunch if he declares himself needy may consume the same food as the child who buys his lunch, but he does not feel himself to be in the same position.

Assets and Wealth. To what extent must the distribution of assets and wealth be included in a welfare analysis? Possession of wealth affects the level at which people live in several different ways. The stock can give rise to a flow of income in money or in kind. (The most important asset for most families is an owned home.) It can have a significant effect on the sense of security and the freedom of action of the individual. And in large enough amounts it can represent power and control of the future well beyond the lifetime of the owner. Richard Titmuss has elaborated and given substance to this aspect of the problem.⁵

Ownership of wealth and particular forms of wealth also have different meanings in a dynamic growth economy than in a more static society. Small—or even fairly large—amounts of assets can lose their value as a result of inflation or economic depression. Physical assets—such as an owned home—can appreciate in value or be destroyed in the path of urban renewal or highway construction. To assign a present value to small or medium-sized stocks of wealth involves hazardous predictions of the future course of economic development. It may be safer—in terms of probabilities—to assume long-term accretion in value the larger the aggregation of wealth, although the type of wealth is also a factor.

The importance of social insurance derives not only from the trans-

fer of income from the economically active to the economically inactive years (or generations), but from the ability of the system to assure a continuing income with a stable or increasing purchasing power. It represents for the middle- and lower-income groups some of the security of wealth. While Social Security benefit levels are as low as they are today, the analogy may seem painfully strained. In terms of the potential of the institutional mechanism, it is valid.

The question of security (i.e., continuity) of income is another aspect of the relation of income to welfare that calls for separate analysis. For the present we can do little more than note the probable direction of corrections or interpretations of the money-income distribution that such analysis would suggest.

Looking only at the current value of assets or wealth, there have been enough studies to give a fairly clear picture of the situation. By and large, there is a high correlation between current income and asset holding. In other words, the poor have little in the way of assets—and almost no liquid assets. For the near-poor and middle-income groups, the value of an owned home is likely to be the major asset. About 60 per cent of all persons or couples sixty-five and over own their homes and in more than four-fifths of the cases it is mortgage-free.⁶ When one asks how Social Security beneficiaries can possibly get along on monthly benefits of \$60, \$70, even the current average of \$86 (\$130 for a couple), a large part of the answer appears to be that an owned home—their major lifetime savings—provides shelter, even though it may not be suitable and even though it may be allowed to run down and depreciate with the years.

There are some individuals with very limited current incomes and large asset holdings (income from assets is, of course, included in total income).

The Recipient Unit

Both conceptually and statistically the unit of reference or of count can significantly affect the apparent distribution of income. In terms of welfare, the individual is the ultimate referent. But the well-being of the individual is dependent on a network of social relations.

In analyzing the distribution of income and of welfare, the structure of individual earned income is an important subsystem. For more general analysis the unit of count is usually either the family or the spending unit, but attention must then be given to demographic changes and family patterns. The age at which young persons leave home and at which new families are formed are affected both by employment op-

portunities and by existing family incomes. In turn they affect any measure of the inequality of family incomes. Changes in family composition through marriage, divorce or separation, birth, and death introduce confusion into any measure of family income over time. Adults, primarily aged persons, may live with children or relatives other than the spouse, because they have no economic alternative. An increase in income can lead to an undoubling of families and thus to a change in the distribution of family income of a different kind than might be expected. It seems clear, for example, that the Social Security program has led to an increase in very low-income households by making it possible for more aged persons to live in their own homes rather than with their children. In this case the increased inequality in the income distribution may have a positive value, since aged persons would appear to place a high value on independent living. A decrease in inequality as a result of more adequate benefits might have a still greater value.

One of the major determinants of family income is the number of adult workers. Employment of the wife and adult children moves many families well up the income scale. Since these are presumably desired family groupings, the summation of incomes does not present the same conceptual issues as in the case of "extra" aged persons. Changes in the extent to which married women work in paid employment do affect trends in family income distribution, however. Here again, the relationship is not simple or static. The relative number of families in the population is affected by the availability of opportunities for employment by wives and children. When these are numerous the formation of new families will be encouraged; when and where employment levels are low, family formation is retarded.

The Time Dimension

The conventional time period for measurement of income is a year. The cycle of the seasons, the measurement of man's aging, and a host of social customs confirm the practice. In practical data-collection terms, the income-tax year further defines the twelve months selected.

Income, however, may fluctuate both within a year or between years. The time period chosen to define "current" income smoothes out or averages fluctuations within the period, but accentuates fluctuations between periods. There is no way of avoiding this effect. An important task of analysis is to measure the variability of income and to assess its effects.

Irregularity of employment produces one type of variability—usu-

ally but not necessarily associated with low annual income. Variability of returns to self-employment—the writer, the artist, the farmer—or to investment may be associated with almost any level of living.

Of a different character are changes in income over a lifetime. Even abstracting from the effect of changes in the value of money or in earnings levels, there is usually some progression in individual earnings and in family income. From less skilled to more skilled and more responsible jobs, from one to more than one earner in the family or vice versa, and then to a falling off in earnings and finally to the usually lower level of retirement income. There are probably several distinguishable patterns of life-cycle earnings. The familiar curve, rising to a plateau in late middle age and then dropping off slightly until retirement when the drop is sharper, is certainly one common pattern. There may be another for certain professional groups where the rise is slower but from a higher base and more continuous. And for some with inadequate training and opportunities that are limited by discrimination, there may be no upward curve at all. (See discussion of age and income in the next section.)

Low current income clearly has a different significance for welfare if it represents a temporary situation rather than a permanent condition. There is a considerable body of economic theory and analysis relating to the differential meaning and effects on spending-saving patterns and family welfare of “permanent” and transitory income. The time dimension for such analysis is the medium long run—longer than a year, shorter than a lifetime. The lag in adjustment of consumption to longer-term changes in income levels has been studied.

It is, however, easier to recognize the significance of the distinction between reasonably “permanent” and variable income than it is to separate the two, particularly in trend data. We need more longitudinal family income data to increase our understanding of this aspect of distribution as related to welfare.

TRENDS IN THE LEVEL AND DISTRIBUTION OF INCOME

Rising average levels of living in the U.S. in recent decades have been visible enough to have become a part of the background interpretation of our society. Aggregate personal income as measured in the National Income Accounts increased from \$14 billion in 1897–1901 to \$584 billion in 1966; or more than fortyfold. Since population increased about 2.6 times over this period, personal income per capita

was only 15.5 times as great in 1966 as at the turn of the century and in constant dollars four times greater. On the average those of us living today have four times as much in the way of goods and services as did those living in 1900. Detailed income data for single years and for various family and personal characteristics are shown in Reference Tables A–H at the end of the chapter.

That the goods and services are different and the conditions of living changed in character may affect the nature of the social problems and the economic and political issues that are dominant today. Whatever qualifications are introduced, the increase in the general level of living is unarguable.

How total income and increases in the total have been shared—whether inequality is increasing or decreasing—is more difficult to measure. A first approximation can be drawn from the figures in Table 1. These are derived from two somewhat different series—the Office of Business Economics (OBE) estimates for the period 1929–1962 of the distribution of personal income as calculated in the National Income Accounts, and estimates for 1947 to date based on the Current Population Survey (CPS) of the Bureau of the Census. The definitions of income in the two series are somewhat different (see notes, Reference Table B). The aggregate income in the family personal income series is larger than that in the CPS series for two main reasons. All survey data tend to miss certain types of income—such as irregular income, self-employment, and investment income—some found most often among low-income groups and some among high-income groups. The OBE series adjusts reported data upward to take account of this fact. In addition, and more important in relation to distribution, it includes an estimate of the value of certain nonmoney income such as wages in kind, the value of food and fuel produced and consumed on farms, the net imputed rental value of owner-occupied homes and imputed interest. The inclusion of the imputed rental value of an owned home, in particular, increases the share of the lowest two-fifths of the population. Farmers and older people are the groups most likely to own their homes. They also typically have low cash incomes. Particularly for these groups, inclusion of an imputed rental value in income may give a somewhat exaggerated impression of their consumption potential.

The OBE is in the process of revising this series and carrying it forward. As of the present, for years after 1962, one has to look at the data on money income from the CPS. The CPS ordinarily reports on

TABLE 1. DISTRIBUTION OF PERSONAL AND MONEY INCOME: MEAN INCOME AND SHARE OF AGGREGATE RECEIVED BY EACH FIFTH AND TOP 5 PER CENT OF FAMILIES AND UNRELATED INDIVIDUALS, SELECTED YEARS, 1929-1966

Year and Income	Mean Income Before Tax (Current Dollars)	Percentage Distribution of Aggregate Income					Top 5 Per Cent
		Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	
<i>Personal Income</i>							
Families and unrelated individual							
1929	\$2,335		12.5	13.8	19.3	54.4	30.0
1935-36	1,631	4.1	9.2	14.1	20.9	51.7	26.5
1944	3,614	4.9	10.9	16.2	22.2	45.8	20.7
1947	4,126	5.0	11.0	16.0	22.0	46.0	20.9
1957	6,238	4.7	11.1	16.3	22.4	45.5	20.2
1962	7,262	4.6	10.9	16.3	22.7	45.5	19.6
<i>Money Income</i>							
Families and unrelated individuals							
1947	3,224	3.5	10.5	16.7	23.5	45.8	19.0
1957	4,861	3.4	10.8	17.9	24.8	43.1	16.7
1962	6,049	3.5	10.3	17.3	24.5	44.3	17.3
1966	7,425	3.7	10.5	17.4	24.6	43.8	16.8
<i>Families</i>							
1947	3,566	5.1	11.8	16.7	23.2	43.3	17.5
1957	5,483	5.0	12.6	18.1	23.7	40.5	15.8
1962	6,811	5.1	12.0	17.3	23.8	41.7	16.3
1966	8,423	5.4	12.3	17.7	23.7	41.0	15.3
<i>Unrelated individuals</i>							
1947	1,692	2.9	5.4	11.5	21.3	58.9	33.3
1957	2,253	2.9	7.2	13.6	25.3	51.0	19.7
1962	2,800	3.3	7.3	12.5	24.1	52.8	21.3
1966	3,490	2.8	7.5	13.2	23.8	52.7	22.5

SOURCE: Personal income: Reference Table B; Money income: Reference Table C, and Henson, Mary F., "Trends in the Income of Families and Persons in the U.S., 1947-64," Technical Report No. 17, U.S. Bureau of the Census, Washington, 1967.

the money income of families (two or more related persons living together) and of unrelated individuals separately. The average income level of unrelated individuals is considerably less than half that of families and the distribution considerably more unequal. To provide a bridge between the OBE and CPS data, the Bureau of the Census kindly prepared special tabulations showing the distribution of the aggregate money income of families and individuals combined (Reference Table C).

In spite of the differences in definition, the trends in income distribution shown in these series are consistent. Special studies of the changes in the share of income of the top 1 per cent or 5 per cent of income receivers, based on income tax returns, make it possible to extend estimates for these portions of the distribution back to 1913.⁷

The over-all picture is one of a moderate decrease in the share of total income received by the very top income groups from 1913 through World War I, and an increase in their share during the 1920's. With the depression of the 1930's there came a sharp drop in the share of the top 5 per cent, and a rise in the share of the lowest fifth. World War II brought an even more marked rise in the share of the lowest fifth. Since the mid-1940's there has been little observable change in the over-all distribution of income. It is still too soon to tell whether an apparent slight increase in the share of the lowest 20 per cent of families in the past few years represents a real trend.

In concentrating on the stability of the shares received by different groups, one should not overlook the fact that the real income of all groups was increasing. The income which placed a family in the lowest 20 per cent of income receivers in 1935-1936 was \$560; by 1966 it was close to \$3,400. Even when corrected for price changes, this represents a significant improvement in levels of living.

The over-all income curve represents the merging of a number of different curves. There is the dominant pattern of wage and salary income; but this breaks down into very different patterns for men and women, for full-time and part-time workers, for different racial groups, occupations and regions of the country. Self-employment income, while smaller in the aggregate, tends to be concentrated at the upper end of the income curve. The grouping of individuals into families produces its own pattern of distribution. Changes in the relationships over time in the income patterns of important subgroups may help explain the general pattern of income distribution as well as point up issues for social policy.

Trends in Relative Income Level

A continuous series of income data for many subgroups in the population is available for years since 1947 from the Current Population Survey. Because it is both readily available and continuing, most of the tables and much of the analysis that follows relies on that source.⁸ Additional statistical series and special studies are also drawn upon for further explanation or greater depth of analysis.

Both the receipt, and more important, the spending of income are shaped by the family and household groupings in which individuals live. When one is concerned with consumption patterns or levels of living, the income classifier that is generally most relevant is family income—including one-person as well as multiperson families. Most income, however, is earned by individuals. To understand the economic factors that determine family income, it is useful to start with an analysis of trends in individual income. Changes both in size of income and in the number and characteristics of income receivers are significant.

Employment and Occupation. The most important determinant of the income position of a group is whether or not its members are employed and whether full-time or part-time. Within the structure of earnings there are marked differences in the level of earnings and also in the spread or dispersion of earnings for different occupations. Detailed analyses of changes since 1939 made by Herman Miller⁹ suggest a high degree of stability in the relative income positions (by rank) of occupations from farm laborers and foremen up to professional and managerial workers. From 1939 to 1949, however, the lower-paid jobs made relatively greater gains than the higher-paid, with a resultant narrowing of the differentials between occupations and for most occupations a decline in the share of aggregate income going to the top 20 per cent. These were years of decreasing inequality in the over-all income distribution. From 1950 to 1960, higher-paid jobs made, if anything, slightly greater gains than lower.

Comparisons of average income and the degree of inequality of incomes in one occupation as compared with another is more important for labor-market and productivity analysis than for measures of welfare except insofar as there are significant barriers to entry or advancement in the higher-paid and more stable occupations. The opening up of jobs in occupations hitherto closed to women or nonwhites or other special groups can have a significant effect on the absolute and relative in-

comes of those groups without having an immediately measurable effect on the over-all distribution.

On the other hand, the shift from agriculture to industrial occupations has over an even longer period been a dominant factor in rising levels of income and a factor making for greater equality over-all. Farm incomes have been and remain not only lower than nonfarm incomes on the average but more unequally distributed.

Incomes of Men and Women. Most women for part of their adult lives depend on someone else—usually a husband—for at least partial support while they concentrate on running a home and raising a family. However, the available data on income of persons do not reflect this dependency: they attribute to an individual only the earnings and other income received directly by that individual. Income received jointly by husband and wife, or only by the husband but shared by other family members, for example, is not generally allocated among them in the recorded statistics but attributed to only one person. The distinction is important because, unlike data for families of two or more or one-person households—i.e., unrelated individuals—income data for persons are generally shown only for income recipients. Thus, women who are not themselves working or receiving direct payments from other sources are counted as having no income and are not represented in the series.

Changing social forces resulting in a greater tendency for women to work at least part of the year throughout longer periods in their lives and the spread of social insurance to provide some income for both women and men in their old age cause a seeming downward shift in the income status of women relative to that of men. Actually, in one sense women are better off than they used to be because more of them now have some money of their own and so are in some degree economically independent.

In the past twenty years, the average income of women having any income has declined relative to that of men. In 1947, the median income of all women fourteen and over (with any income) was 46 per cent of the median for all men fourteen and over. By 1957, the ratio had dropped to 33 and by 1966, to 31 per cent. The trend actually started earlier. In 1939, the median wage and salary income of women was 59 per cent that of men; by 1949, this ratio had dropped to 49 and by 1959, to 36. One reason is the increasing proportion of all women with income of their own who are married and working less than full-time.

But a more important reason is the fact that because of OASDHI so many more aged women now have some money of their own. The maturing of the Social Security program during these twenty years has seen the percentage of women sixty-five and over receiving a benefit check increase markedly from a rate only 70 per cent that prevailing among aged men in 1947, to a rate 2 per cent higher than that for men in 1966. In parallel fashion, the proportion of aged women having income from any source increased from fewer than one in two to better than four in five, a greater rise than in any other age group. Accordingly, in 1966, one in five women receiving income was age sixty-five or older compared with one in eight in 1947. Among men, the proportion of recipients who were aged rose too, but in lesser degree: in 1947, one in eleven of all male income recipients was aged; by 1966, the number was one in eight.

The figures in Table 2 show for aged men and women and for persons of all ages fourteen or older the changing percentage receiving any income.

TABLE 2. PERCENTAGES OF AGED PERSONS AND ALL PERSONS AGED 14 AND OVER RECEIVING ANY INCOME, SELECTED YEARS, 1947-1966

<i>Age group</i>	<i>1947</i>	<i>1953</i>	<i>1957</i>	<i>1964</i>	<i>1966</i>
<i>Total aged 14 or over</i>			<i>(percentages)</i>		
Men	89	91	92	91	92
Women	34	46	53	60	61
<i>Age 65 or over</i>					
Men, all sources	84	92	95	98	99
OASDHI	14	38	59	78	83
Women, all sources	47	59	72	82	83 ^a
OASDHI	9	30	49	74	85 ^a

^a Slight discrepancy because data come from different sources. An aged husband and wife receiving joint benefit checks would be counted as two OASDHI beneficiaries, but census income data could show wife with zero income if she did not state that part of the check was hers.

SOURCE: Derived from Current Population Survey, Series P-60, and unpublished data from the Social Security Administration.

Age and Income. Income generally increases with age up to a point and then declines again. The extent of the differences and the age at which income peaks are different for different groups.

For all men, median income is highest in the age group thirty-five to forty-four and declines thereafter. However, those with lowest incomes

reach their peak on the age cycle before the age of forty, while the incomes of those in the highest income groups do not decline before age sixty. Among women with some income, peak incomes in recent years have occurred in the forty-five to fifty-four year age group at all income levels.¹⁰

These general relationships have changed relatively little in the past two decades. A comparison of the ratio of median income for five-year age groups to the median of all males or all females over the period 1947 to 1966 shows considerable stability for most groups. For fourteen to nineteen year-olds among both men and women, however, both the absolute and relative income levels declined over these two decades. More years at school and a consequent later entry into the labor force, with some increase in unemployment among teenagers are reflected in these figures. There was also a decline, though not as marked, in the relative income position of the twenty- to twenty-four-year-old men.

The other instance of a change large enough and persistent enough to suggest a definite trend was in the relative income position of women fifty-five to sixty-four. The median income of women in this age group increased considerably faster than that of other women (the ratio of the median for this age group to the total for all females was .95 in 1947 and 1.35 in 1966).

A closer look at changes in the income position of different age groups since 1941 provides hints as to some of the forces that have been at work and their effect on the over-all income distribution during this period. Using data for 1941 from the special studies of family spending and saving in wartime carried out by the Department of Labor and the Department of Agriculture in 1942, and census data for 1951 and 1961, Dorothy Brady analyzed the changes over time in the income position of different age groups.¹¹ Table 3 shows the relative changes in the upper income limits of the lowest and next to the highest income classes for different age groups that occurred between 1941 and 1951, between 1951 and 1961 and between 1961 and 1966 (the latest year available). In the earlier decade, income increased most rapidly for the younger age groups among both men and women and for those in the lowest quintile. For men up to age fifty-five the income limit for the lowest income group was more than three times as high as the same relative position in 1941. Between 1951 and 1961, however, with the exception of those aged sixty-five and over, the income of the lowest fifth increased substantially less than that of the other income classes, and particularly at the younger ages. For women the increase in income for those in the lowest relative income position was even

TABLE 3. CHANGES IN THE INCOMES OF PERSONS,
1941-1966: RATIOS OF SELECTED PERCENTILES
OF INCOME IN 1951 COMPARED TO 1941, IN
1961 COMPARED TO 1951 AND IN 1966
COMPARED TO 1961, BY AGE GROUP

<i>Sex and Ratio</i>	<i>20-24</i>	<i>25-34</i>	<i>35-44</i>	<i>45-54</i>	<i>55-64</i>	<i>65 and over</i>
<i>Men</i>						
Ratio of first quintiles						
1951 to 1941	3.4	3.2	3.1	3.1	2.6	1.7
1961 to 1951	0.9	1.3	1.5	1.5	1.7	2.0
1966 to 1961	1.3	1.4	1.3	1.4	1.2	1.3
Ratio of fourth (top) quintiles						
1951 to 1941	2.5	2.1	2.1	2.1	2.3	2.3
1961 to 1951	1.4	1.6	1.6	1.6	1.7	1.3
1966 to 1961	1.3	1.3	1.3	1.3	1.2	1.2
<i>Women</i>						
Ratio of first quintiles						
1951 to 1941	4.9	5.3	5.0	2.4	4.1	1.6
1961 to 1951	0.9	0.9	1.2	1.4	1.3	2.3
1966 to 1961	1.3	1.3	1.4	1.5	1.5	1.3
Ratio of fourth (top) quintiles						
1951 to 1941	2.6	2.8	3.0	2.6	3.5	1.4
1961 to 1951	1.4	1.4	1.5	1.6	1.5	1.6
1966 to 1961	1.2	1.2	1.2	1.2	1.3	1.3

SOURCE: Brady, Dorothy, "Age and the Income Distribution," Research Report No. 8, Social Security Administration, Washington, D.C., 1965, Table 1; and unpublished census data.

greater during the war years than for men and similarly was less for low than high income groups from 1951 to 1961. Between 1961 and 1966, the relative increase in income was nearly the same for all age groups, except women aged forty-five to sixty-four who showed a greater gain, particularly at the lowest income levels.

These relationships confirm the general impression of increasing equality of income during the war years and a reversal of this trend or at least a stability in the distribution of income in the subsequent period. They also show very clearly the effect of improvements in Social Security benefits after 1950.

They confirm the decline in the relative income position of younger men suggested by the comparison of median incomes. In 1951 the first quintile income of twenty to twenty-four-year-old men was 47 per cent of the corresponding income of thirty- to thirty-five-year-olds; in 1961

it was 30 per cent and in 1966 only 28 per cent. The relationship of the second quintiles was reduced proportionately about as much in the decade 1951 to 1961, from 58 to 41, and remained at 40 per cent in 1966.

Within age groups, except for the age group under twenty-five, there is an increase in inequality of incomes with age, particularly for men. There has been little change in this pattern in recent years. Differential advancement in occupations involving different degrees of skill, as well as income from accumulated assets explains part of the variation among age groups, but the major factor appears to be differences in the extent of full year work. James Morgan computed the Gini ratio for all men and men who worked fifty weeks or more in 1959 as reported in the CPS and also for all heads of families and heads who worked a full year in 1957 from the University of Michigan Survey Research data. Both showed clearly that part-year earnings have a major effect on the degree of inequality, with such earnings largely concentrated among the young and those over fifty-five.¹²

Morgan noted further that the number of weeks worked during a year appears to be closely associated with the level of formal education. The impact of education on changes in income with age is a result of a combination of greater unemployment among those with less education and more advancement among those with more education.

Changes in the dispersion of income—the relative degree of inequality—for different age groups are indicated perhaps more clearly by the ratio of the income limits of the first, second and third income quintiles to the fourth. This comparison, as well as the ratio of the 95th percentile to the fourth quintile is shown in Table 4.

Here also it is clear that during the decade of the 1940's, the relative income position of the lowest income groups, except men sixty-five years of age or older, was improving. By 1961 the ratios, particularly for the younger age groups, were reversing toward the 1941 position. By 1966 there had been an improvement in the middle age groups, but not in the position of the twenty- to twenty-four-year-olds.

The increasingly unfavorable income position of the younger age groups points to a danger that inequalities in the income distribution will be perpetuated over the next twenty years as these cohorts age unless expanding opportunities provide a corrective.

For those over age sixty-five, and to some extent those aged sixty to sixty-four, changes in income and income shares are now the result of social insurance and other income maintenance programs almost to a

TABLE 4. CHANGES IN THE DISPERSION OF INCOMES OF MEN AND WOMEN: RATIOS OF SELECTED PERCENTILES OF INCOME TO THE FOURTH QUINTILE, 1941, 1951, 1961, AND 1966

<i>Sex and Years</i>	<i>Age Group and Comparison</i>					
	20-24	25-34	35-44	45-54	55-64	65 and over
<i>Men</i>						
	Ratio of first to fourth quintile					
1941	.23	.32	.31	.26	.23	.23
1951	.31	.49	.45	.38	.26	.16
1961	.22	.41	.41	.35	.27	.25
1966	.22	.46	.42	.39	.27	.26
	Ratio of second to fourth quintile					
1941	.50	.53	.56	.54	.40	.38
1951	.54	.68	.64	.58	.52	.30
1961	.45	.62	.61	.58	.50	.39
1966	.44	.65	.61	.58	.52	.41
	Ratio of third to fourth quintile					
1941	.72	.76	.76	.75	.66	.65
1951	.78	.81	.79	.75	.74	.50
1961	.71	.79	.77	.76	.71	.59
1966	.70	.80	.76	.74	.72	.60
	Ratio of 95th percentile to fourth quintile					
1941	1.42	1.34	1.38	1.40	1.47	1.98
1951	1.35	1.41	1.58	1.64	1.71	1.96
1961	1.44	1.63	1.70	1.89	1.84	2.55
1966	1.37	1.44	1.72	1.86	1.90	2.12
<i>Women</i>						
	Ratio of first to fourth quintile					
1941	.10	.09	.12	.17	.13	.19
1951	.20	.18	.17	.16	.15	.22
1961	.13	.12	.13	.14	.13	.31
1966	.14	.13	.15	.17	.15	.31
	Ratio of second to fourth quintile					
1941	.30	.30	.29	.29	.34	.36
1951	.47	.45	.41	.35	.32	.43
1961	.35	.34	.35	.37	.30	.47
1966	.37	.38	.41	.42	.32	.46
	Ratio of third to fourth quintile					
1941	.63	.60	.55	.55	.55	.58
1951	.70	.66	.66	.68	.59	.70
1961	.64	.64	.66	.64	.56	.62
1966	.69	.68	.67	.66	.64	.64
	Ratio of 95th percentile to fourth quintile					
1941	1.36	1.63	1.90	1.82	1.85	2.14
1951	1.28	1.33	1.44	1.45	1.67	2.30
1961	1.37	1.52	1.45	1.56	1.68	2.07
1966	1.39	1.47	1.48	1.54	1.63	2.43

SOURCE: See Table 3.

greater extent than changes in employment. The larger increase between 1951 and 1961 in the income of those aged sixty-five and over compared with younger persons in the lowest income quintile has been remarked. For middle-income groups the relative position of those sixty-five and over compared less favorably with that of men in their working years.

For the top 5 per cent of income receivers, those sixty-five and over are the most favored age group. It is of interest, also, that among women the sixty-five and over group is in a generally more favorable income position than the younger ages. It would appear that there is less inequality in the social insurance benefits and other payments received by aged women than in the earned incomes of women who work varying amounts of time.

Income of Whites and Nonwhites. The generally lower earnings and income levels of nonwhites as compared with whites is well known. Here is an area where improvement could be significant even before the change was large enough to have much effect on the over-all income distribution curve.

In 1948, the median money income of nonwhite males (\$1,765) was a little over half that of white males (\$3,258). By 1966, both groups had money incomes about two-thirds larger (\$2,961 and \$5,364), but the level for nonwhite men was still only a little over half that of white men. For nonwhite women and for nonwhite compared with white families the picture was more encouraging. The ratio of nonwhite to white median incomes for several different groups in selected years is shown in Table 5.

TABLE 5. RATIO OF NONWHITE TO WHITE MEDIAN INCOMES FOR SELECTED GROUPS AND YEARS, 1947-1966

Groups	1947	1953	1957	1964	1966
Males 14 and over ^a	.54 ^c	.55	.47	.57	.55
Females 14 and over ^a	.49 ^c	.59	.62	.70	.76
Families ^b	.51	.56	.54	.56	.60
Unrelated individuals ^b	.72	.80	.67	.69	.73

^a Median for those with income only.

^b Includes families and individuals with zero income.

^c 1948 (1947 not available).

SOURCE: Henson, Mary F., "Trends in the Income of Families and Persons in the U.S., 1947-64," Technical Report No. 17, U.S. Bureau of the Census, Washington, 1967; and "Income in 1966 of Families and Persons in the U.S.," Current Population Survey, Series P-60, no. 53, December 28, 1967.

The shift in the position of nonwhite women is striking. At the end of the period the median income of nonwhite women was above that of white women in all regions except the South, where it remained little more than half that of white women. In 1953, when such regional data first became available, the median income of nonwhite women was about 80 to 85 per cent that of white women in the North and a little less than 50 per cent in the South.

It would appear that nonwhite women in the North and West have been shifting into higher-paid occupations. Nonwhite women are also more apt to work full time than are white women. In the country as a whole, full-time employment among nonwhite females has been increasing to a greater extent than part-time work while the opposite has occurred among white women.

The incomes of nonwhite men are relatively the highest as compared with the incomes of white men when they are young and when they are old. They are relatively high at the young ages because for nonwhites income does not rise in the middle years to the same extent as for whites. They are relatively high after age sixty-five because Social Security benefits are relatively more adequate—that is, replace a larger proportion of previous earnings—for persons with low earnings. The relative income position of nonwhite women is most favorable in the ages from twenty-five to forty-four and after sixty-five. Indeed in these ages they are approaching equality with white women.

These relationships are summarized in Table 6 for the year 1959 (from the 1960 Census; these breakdowns are not available from the CPS).

In interpreting these differences several factors are important. The longer hours worked by nonwhite women have been noted. Nonwhite men on the other hand experience more unemployment or part-time employment than do white men. The importance of full-year work in relation to income levels was pointed out earlier. Nonwhites, both men and women, are generally employed in the low-paying occupations—those requiring little skill and having little future. Beyond this there is some indication that even within the same occupations there may be significant differentials in pay and in the opportunity to advance.

In an analysis which takes account of the effects of family background, education, mental ability, number of siblings, and occupation, Otis Dudley Duncan concludes that at least one-third of the difference in average income (for 1961) of Negroes and whites "arises because Negro and white men in the same line of work, with the same amount of formal schooling, with equal ability, from families of the same size

TABLE 6. PERCENTAGE OF NONWHITE MEN AND WOMEN IN INCOME QUINTILES FOR THEIR AGE GROUPS, 1959

<i>Sex and income rank</i>	<i>20-24</i>	<i>25-34</i>	<i>35-44</i>	<i>45-54</i>	<i>55-64</i>	<i>65 and over</i>
<i>Nonwhite men</i>						
Number per 1,000 persons	110	106	97	93	89	79
Percent	100	100	100	100	100	100
In lowest fifth	33	48	51	48	43	37
In second fifth	24	26	27	28	29	26
In third fifth	22	14	14	15	18	18
In fourth fifth	13	8	6	7	8	13
In upper fifth	7	4	3	3	3	7
<i>Nonwhite women</i>						
Number per 1,000 persons	122	164	140	118	101	77
Percent	100	100	100	100	100	100
In lowest fifth	31	25	28	35	32	25
In second fifth	29	25	27	30	31	25
In third fifth	20	24	22	18	21	25
In fourth fifth	11	15	14	11	11	16
In upper fifth	9	11	10	7	6	9

SOURCE: Brady, Dorothy, "Age and the Income Distribution," *op. cit.*, Table A6, p. 60.

and the same socioeconomic level simply do not draw the same wages and salaries."¹³

Regional Variations in Income Levels. There is an interacting set of relations between the income levels of different population groups and of the several regions of the country. In general, incomes in the South are substantially lower than those in other parts of the country. The median income of men aged fourteen and over for the U.S. as a whole was \$5,306 in 1966; in the South it was \$4,025 or only three-fourths as much. The ratio of median income for the four census regions to the U.S. median has changed relatively little since 1953, the first year for which such data are available, as shown in Table 7.

As noted earlier, for the U.S. as a whole, the median income of nonwhite men is a little over half (.55 in 1966) that of white men. In the South the median for nonwhite men in 1966 was only 49 per cent that for whites whereas in the other three regions it was about three-fourths that of white males. There has been no significant change in these relationships since 1953.

For females, on the other hand, as was noted earlier there has been a significant relative increase in the incomes of nonwhite women in all regions except the South. Table 8 gives the ratio of nonwhite to white

TABLE 7. RATIO OF REGIONAL TO U.S. MEDIAN INCOME, SELECTED YEARS, 1953-1966

	1953	1959	1964	1966
Males 14 and over				
Northeast	1.08	1.11	1.10	1.09
North Central	1.10	1.08	1.09	1.08
South	.73	.73	.76	.76
West	1.09	1.15	1.14	1.13
Females 14 and over				
Northeast	1.29	1.29	1.26	1.22
North Central	1.01	.97	.99	.97
South	.78	.75	.81	.85
West	.97	1.09	1.06	1.07

SOURCE: See Table 5.

median incomes for females aged fourteen and over in the four regions.

Over a longer time span, there has been an increasing convergence in the income levels in the different regions of the country. In an interesting comparison of changes in the spatial distribution of income in the U.S. and changes in the national size distribution, Eugene Smolensky has analyzed the factors underlying changes in the dispersion of state per capita incomes and of income shares over the period 1919-1948.¹⁴ There was a marked similarity in trend in the two measures: in the period of the 1920's when income inequality was increasing, so were the differences in state per capita income; in the 1940's when incomes were becoming more equal, state per capita incomes also tended to converge.

Smolensky isolates the factors that appear to have been responsible for these changes. The major force affecting both the size distribution and the regional distribution was the shift out of agriculture. Interestingly, he finds that the shift into manufacturing played a negligible part

TABLE 8. RATIO OF NONWHITE TO WHITE MEDIAN INCOMES FOR FEMALES AGED 14 AND OVER BY REGION, SELECTED YEARS, 1953-1966

Region	1953	1959	1964	1966
U.S.	.594	.621	.702	.761
Northeast	.834	1.005	1.087	1.194
North Central	.869	1.123	1.002	1.126
South	.482	.438	.530	.571
West	n.a.	1.060	1.258	1.076

SOURCE: See Table 5.

in the reduction of regional income differentials, but the shift into service industries—trade, finance, professions and government—was a major factor.

Family Income Distribution. The changes that have been occurring in the employment and relative income position of older women, non-white women at all ages and younger men and women suggest something of what has been happening with respect to family income.

Over the past two decades the number of unrelated individuals has been increasing at a faster rate than the number of families. This is in part due to the undoubling of families that occurs in prosperous times, in part to the independence that Social Security benefits have brought to many older persons who would formerly have been forced to live with their children. There has been an increase also in the number of aged couples living by themselves. The independence has in many cases been at the price of very low income levels. The effect of these changes has no doubt been in the direction of greater inequality in the total distribution.

On the other hand, the increasing employment of women has been a factor tending toward greater equality in family incomes. Because most people live as members of families, the trend in the over-all distribution of income of families has not been very different than that of all families and individuals combined (see Table 1).

For families as for individuals one can analyze differences in the level and distribution of income by age and sex of the head, by number of earners, by size of family, region and other characteristics. Some of these relationships have remained fairly stable over the past two decades, others have shown a definite trend. The ratio of the median income of families of different types in selected years since 1947 indicates some general patterns (Table 9):

TABLE 9. SELECTED RATIOS OF MEDIAN FAMILY INCOME, SELECTED YEARS, 1947-1966

<i>Ratios</i>	<i>1947</i>	<i>1957</i>	<i>1964</i>	<i>1966</i>
Nonwhite to white	.51	.54	.56	.60
Female to male head	.72	.54	.50	.51
Heads 65 and over to all	.60	.50	.51	.49

SOURCE: See Table 5.

The improvement in the position of Negro families is clear. When the comparison is made between nonwhite and white heads of families who worked year-round full-time, median income for nonwhites is 68 per

cent that of whites in 1966, as compared with 60 per cent for all families. White families with a head who was a year-round full-time worker had a median income 15 per cent higher than that of all white families; for nonwhite families the difference was 30 per cent. These figures suggest again the greater extent to which income of nonwhites is pulled down by part-time or part-year employment and by the fact that a larger proportion of nonwhite families have a female head.

Total family income is, of course, related to the number of earners in the family. In recent years median income has increased with each increase in size of family from two through five persons, then decreased. Above five, additional persons in the family are more likely to be children under eighteen. The median income of families with four children in 1966 was lower than that of families with three children and additional children reduced the median level still further.

The extent to which the employment of married women has added to family income can be inferred from the proportion of husband-wife families at each income level in which the wife was in the paid labor force (Table 10). Among husband-wife families in the lowest 20 per

TABLE 10. PERCENTAGE OF HUSBAND-WIFE FAMILIES
WITH WIFE IN PAID LABOR FORCE,
SELECTED YEARS, 1949-1966

<i>Income rank</i>	<i>1949</i>	<i>1957</i>	<i>1959</i>	<i>1964</i>	<i>1966</i>
Lowest fifth	10.3	11.9	11.8	11.8	12.5
Second fifth	15.2	19.5	19.2	23.3	24.3
Third fifth	15.7	22.3	23.6	28.6	30.5
Fourth fifth	24.8	32.2	32.4	38.1	40.6
Highest fifth	27.2	38.2	36.9	41.6	45.6
Top 5 per cent	18.4	29.3	24.8	35.0	38.4

SOURCE: Reference Table G.

cent of families ranked by income, there has been little increase since 1949 in the proportion in which the wife works. In each year for which we have data, moreover, the proportion of working wives is greater in each successive income quintile and drops off only in the top 5 per cent.

If families with working wives are underrepresented among families with low incomes, families with heads aged sixty-five and over, families headed by a woman and nonwhite families are overrepresented. In 1966, for example, families headed by an aged person accounted for 14 per cent of all families, but for 37 per cent of families in the lowest fifth and 6 per cent in the top fifth. Similarly families headed by a

woman represented 11 per cent of all families, but 25 per cent of those in the lowest fifth and 3 per cent of those in the top fifth. Nonwhite families made up 10 per cent of all families in 1966, twice as large a proportion of the lowest fifth and 4 per cent of the highest fifth.

The proportion of all families in the lowest fifth who are headed by an aged person or a woman has increased significantly since 1947 (Table 11). The improvement in the relative position of nonwhite fam-

TABLE 11. SELECTED FAMILY TYPES AS PERCENTAGES OF ALL FAMILIES IN LOWEST INCOME FIFTH, SELECTED YEARS, 1947-1966

<i>Type of family</i>	1947	1957	1964	1966
		<i>(percentages)</i>		
With head aged 65 and over	26	32	34	37
With female head	18	22	24	25
Nonwhite	22	22	21	21

SOURCE: See Reference Table G.

ilies between 1947 and 1966 was somewhat greater than the above figures alone would suggest. In 1947, nonwhite families formed only 9 instead of 10 per cent of all families. Hence in 1947 there were 2.4 times as many nonwhite families in the lowest income group as their proportion in the population, while by 1966 the ratio had dropped to 2.1.

Another way of looking at the same relationships is to compare the proportion of all families of a given type who are in the lowest income quintile. As compared with 20 per cent of all families in the lowest fifth, the percentages for specific type families are shown in Table 12. Nonwhites were overrepresented in the lowest income group in 1966, but

TABLE 12. PERCENTAGES OF ALL FAMILIES OF GIVEN TYPE IN LOWEST INCOME FIFTH, SELECTED YEARS, 1947-1966

<i>Type of family</i>	1947	1957	1966
White families	17.2	17.3	17.6
Nonwhite families	48.9	46.1	41.2
Head aged 65 and over	45.6	50.1	52.1
Female head	36.4	46.5	47.7
Male head, wife in paid labor force	n.a.	9.6	8.1

SOURCE: See Reference Table G.

to a considerably lesser extent than in 1947. The relative position of families with an aged or a female head, however, had worsened.

Trends in Poverty

As the general level of income and the over-all degree of inequality change, the characteristics of the families and individuals in the lowest fifth of the income ranks can also be expected to change. There will, of course, always be a lowest fifth. The important questions for policy are whether the share of aggregate income going to the lowest 20 per cent of income receivers can and should be increased and whether or not certain kinds of families are found in disproportionate numbers in the lowest group.

In general parlance the term "disproportionate" carries a vague overtone of ethical judgment. Everyone would recognize that certain differences are to be expected and raise no real questions of social policy. The young husband-wife family just starting out on a career would be expected to show up with greater frequency in the lower income ranks. Persons with irregular and fluctuating income will be overrepresented, in any given year, in both the low and the high income groups. Neither situation may raise any serious welfare or equity problems—although irregular income resulting from continuing part-year unemployment is a problem. On the other hand, the continuing large overrepresentation of nonwhites and the now larger and increasing overrepresentation of families headed by aged persons and by women at the bottom of the income ladder raise evident social policy issues.

Any attempt to distinguish between acceptable and unacceptable degrees of disparity or concentration of particular groups in the lowest income levels leads toward some concept of minimum need and some recognition of variations in need among different types of families.

Since the latter part of the nineteenth century, the conceptual tool that has most often been used to arrive at such judgments is the family budget—a listing and pricing of the items of consumption regarded as necessary for minimum subsistence or for adequacy. The development of objective standards of nutritional "needs" and at least minimum standards for housing has provided one basis for such budgets. Most of the early budgets attempted to define a subsistence standard. With rising levels of living the concept of a social minimum, enough for comfort and decency, became more common.¹⁵ As early as 1909 the Bureau of Labor Statistics developed budgets for cotton-mill workers in the South and in Fall River, Massachusetts, that defined two living

levels—minimum and fair. The WPA budgets of the 1930's also used two levels and the BLS is again in 1968 planning to develop a lower level budget as well as the "modest but adequate" budget that has become standard in recent years—and a higher level also.

The fact that the lowest fifth of all families (measured by family income) receive only 5 per cent of aggregate family income may take on a somewhat different coloring depending on the presumed adequacy of the income they get to meet minimum needs. On the other hand, the repeated revisions of measures of minimum need as the general level of living goes up is evidence of the way in which the concept of fair shares permeates the budget approach.

It would be of some interest to see how the amount regarded as necessary for either subsistence or for decent living related to the existing income distribution of the period. Most budgets tie so closely to an individual place and specifically defined family type that comparisons with per capita income or other generalized averages are not very meaningful and it is only in recent years that the data have been available that would make it possible to estimate the incomes of families like the assumed budget family. The most recent BLS four-person family budget at a moderate level, for example, is for a family with an employed husband aged thirty-eight, a nonworking wife, a boy of thirteen, and a girl of eight. The amount needed by such a family in Autumn, 1966, to meet the budget standards was \$9,191 in all cities—ranging from \$11,190 to \$7,855 in the areas for which the budget is priced. The BLS estimates that for families like those for whom the budget was computed, the mean income was about \$11,000. A comparable figure for median income is unfortunately not available. Estimates from the CPS indicate the range within which it would fall. In 1966, the median income of four-person families with a head who worked year round was \$8,960; in about a third of these families, however, the wife as well as the husband was employed. For families (of all sizes) with a male head who worked year round and a wife who was not in the labor force, the median family income was \$8,168. The median income of all men who worked year round full-time was \$6,955 and for those in nonfarm employment, \$7,095.

A comparison of family budgets for New York City for different years beginning with 1914, with annual earnings of workers in manufacturing shows the budgets in all years to be somewhat higher than the average earnings of production workers generally. In Table 13 published family budgets for New York City are related to estimates of the annual earnings of production workers (weekly earnings times 52).

TABLE 13. FAMILY BUDGETS RELATED TO ESTIMATES OF ANNUAL EARNINGS OF PRODUCTION WORKERS, NEW YORK CITY, SELECTED YEARS, 1914-1966^a

<i>Year and Budget</i>	<i>Annual Earnings of a Worker on Manufacturing Payroll (1)</i>	<i>Family Budget (Four-Person Family) (2)</i>	<i>Ratio: (2) (1)</i>
1914 New York Factory Commission	\$ 624.62	\$ 1,062.23	1.701
1918 New York Minimum Comfort	1,093.66	1,408.40	1.288
1920 New York City Labor Bureau	1,488.34	2,106.14	1.415
1935 New York WPA Maintenance	1,138.85	1,375.13	1.207
1947 BLS New York City Workers	2,780.44	3,347.00	1.204
1951 BLS New York City Workers	3,374.80	4,083.00	1.210
1954 New York City Family Budget Standard	3,718.00	4,221.88	1.136
1966 New York City Family Budget Standard	5,790.20	5,980.00	1.033
1966 BLS New York City Workers			
All	5,790.20	10,195.00	1.761
Renters	5,790.20	9,075.00	1.567

^a Data on earnings for all U.S. from 1914 through 1935 were increased by 10 per cent in order—it is believed—to approximate more closely the New York level than would the United States average. Data for New York were available for the later period. The earlier budgets were adjusted roughly to a four-person family.

Earlier studies in England as well as current budget studies for countries at various stages of economic development generally show minimum budgets at a lower level relative to prevailing wages.¹⁶

There have been a number of official and unofficial studies in the past two decades that have attempted to identify the low-income groups in our population. A 1949 Report of the Joint Economic Committee assembled estimates of the number of low-income families defined as those with less than \$2,000 a year income for urban families and \$1,000 for farm families. "The cash income levels chosen—were selected only to designate an income group for intensive study. An important consideration in making the choice was to use amounts which would be realistic in even the lowest cost areas of the country. It is improbable that there will be more than a minor proportion of families

able to purchase all their requirements with incomes below these amounts."¹⁷ The Report estimated that in 1948 one-third of all families and individuals in the United States received incomes under \$2,000. In 1948, \$2,000 was about mid-way between the upper limit of the lowest fifth (\$1,655) and of the second fifth (\$2,721) of family incomes.

In 1955, the Joint Economic Committee again assembled information on the low-income population, and again used \$2,000 as the measure of low income. Estimates were also made on the basis of constant (1948) dollars. On this latter basis there was little change in the number and a small decrease in the proportion of "low income" families.¹⁸

In its 1964 report, the Council of Economic Advisers used \$3,000 as the poverty line for families and \$1,500 for unrelated individuals, basing the choice of the amount for families on the lower of two indexes developed by the Social Security Administration (SSA) for a nonfarm family of four. It was estimated that 20 per cent of all families had money income of less than \$3,000 in 1962. The dividing line between the first and second 20 per cent of families ranked by income was \$3,018 in 1962.

In 1965, the SSA having refined and expanded the budgets to include minimum cost standards for all sizes and types of families, the Council adopted the lower of the two SSA measures as the working delineator of poverty. The SSA poverty index, discussed in more detail below, adjusted annually for price change has been used since as the working definition of poverty. Trend data on this basis extend back to 1959. In subsequent reports for somewhat longer historical trend data (from 1947) the Council of Economic Advisers has retained the \$3,000 and \$1,500 measures, with the amounts adjusted for earlier years to reflect price changes.

Variable Measures of Need. If one wants to introduce a concept of need, and equity as related to need, it is necessary to go beyond a distinction between families and individuals. \$3,000 will provide a very different level of living for a family of seven than for a family of two. Some earlier studies had taken account of this by using a figure of \$1,500 for the first person plus \$500 for each additional person in a family up to some specified amount. The poverty and low-income indexes developed by the Social Security Administration incorporate variations based more specifically on family composition as well as size, age of the head, and farm-nonfarm residence.¹⁹

The gross number and proportion of the population counted as poor

by any measure will reflect primarily the level of living used as the basis. The level of the Social Security Administration poverty index for a nonfarm family of four averaged \$3,130 for 1962 incomes. For single individuals it was \$1,580 for those under sixty-five and \$1,470 for those over sixty-five. It is not surprising therefore that the total count of the poor was about the same using the more refined and variable index as the \$3,000 measure.

The poverty level is a stringent level. It is based on a food budget that the Department of Agriculture defines as adequate for short periods and on an emergency basis only, and it allows only twice the amount of the food budget to cover all other family expenditures. The SSA has also developed a "low-income index" at a level about a third higher. In 1966, this low-income index was about 25 per cent above the upper limit of incomes for families in the lowest income fifth.

It is when we look at the detailed characteristics of the families and individuals classified as poor (or near-poor) that the differences between the two types of poverty measure appear. When differential need is taken into account, and the income limit or cut-off point varied to provide some approximation of equivalent levels of living, the poverty or low-income group will include a much higher proportion of large families and of children under eighteen and a smaller proportion of aged persons. Because Negro families are, on the average, larger than white families, the percentage of nonwhite is also greater than when a single figure is used for all family sizes.

A comparison of families in the lowest fifth of income receivers with families below a variable poverty line shows some of the same contrasts. The general magnitude of these differences is indicated in the comparison in Table 14 for 1964 incomes.

It is worth noting that when families are grouped by such characteristics as male and female head, without reference to the size of the family or age of the head, the differences in the proportion shown as poor or in the lowest income fifth are small. The figures in Table 15 are also for 1964 incomes.

Incidence of Poverty. The disproportionate representation of certain groups in the lowest income fifth was noted earlier. One can express this same relationship by saying that the risk of being poor is greater for some groups than for others. Comparable data for the years 1959-1967 based on the SSA poverty and low-income indexes make possible analyses of the changing incidence and volume of poverty among many subgroups as well as the noninstitutional population as a whole.

TABLE 14. COMPARISON OF FAMILIES IN LOWEST INCOME FIFTH AND THOSE BELOW VARIABLE POVERTY LINE, 1964

Type of Family	Families in Lowest Income Fifth	Poor Families	Low-Income (Poor and Near-Poor) Families
Total families (in thousands)	9,567	6,832	10,665
	(percentages)		
All family sizes	100.0	100.0	100.0
2 persons	52.6	32.4	33.8
3-5 persons	36.2	41.3	41.5
6 persons	4.3	8.6	8.6
7 or more persons	6.8	17.7	16.2
All families	100.0	100.0	100.0
No children under 18	53.6	33.4	34.9
1 or 2 children	26.8	27.3	28.6
3 or 4 children	12.6	22.8	21.7
5 or more children	7.0	16.6	14.8
All families	100.0	100.0	100.0
Head 14-24	8.7	8.3	8.6
Head 25-44	27.7	41.0	40.8
Head 45-64	29.7	28.9	27.7
Head 65 and over	34.0	21.9	23.0
All families	100.0	100.0	100.0
White	78.9	72.5	77.2
Nonwhite	21.1	27.5	22.8

SOURCE: Henson, Mary F., "Trends in the Income of Families and Persons in the U.S., 1947-64," Technical Report No. 17, U.S. Bureau of the Census, Washington, 1967; and unpublished data from the Social Security Administration.

TABLE 15. COMPARISON OF FAMILIES IN LOWEST INCOME FIFTH AND THOSE BELOW VARIABLE POVERTY LINE, BY FAMILY TYPE, 1964

Type of family	Families in Lowest Income Fifth	Poor Families	Low-Income (Poor and Near-Poor) Families
	(percentages)		
All family types	100.0	100.0	100.0
Male head	75.6	73.2	77.8
Married-wife present	72.0	69.9	74.9
Wife in labor force	11.8	11.8	13.6
Wife not in labor force	60.2	58.0	61.3
Other marital status	3.6	3.3	2.9
Female head	24.4	26.8	22.2

SOURCE: See Table 14.

The incidence of poverty over-all in 1966 was 15 per cent—that is, 15 per cent of the noninstitutional population, or 29.7 million persons, were living in households (families and unrelated individuals) that had incomes below the poverty line. For white persons, however, the incidence was 12 per cent, for nonwhites 41 per cent. For aged persons living alone, the risk of being poor (the proportion with incomes below the poverty line) was 54 per cent if they were white, 77 per cent if they were nonwhite.

In terms of numbers, far more poor persons are white than are non-white, are young than are old. Any social policy that is successful in reducing inequality and low incomes will affect larger numbers of whites, of families headed by men and younger family heads than it will nonwhites, families headed by women or aged family heads simply because of their greater number in the total population and in the lowest income groups. An analysis of the incidence of poverty points up the differential inequalities that affect certain groups and that may require differential approaches in addition to a general improvement in levels of living if the objectives of lessened inequality and greater social justice are to be reached.

The most dramatic observation that emerged from the initial poverty analysis was the large proportion (one-third) of all poor children who were in families headed by a man who had worked fifty to fifty-two weeks during the year. Here the use of a higher income cut-off point for large families results in a major difference from the picture that emerges when a single dollar amount is used to define poverty for all families or where one looks at income shares. Indeed, more than two-thirds of all poor children, as measured by the poverty index, are in families with four or more children.

The nature of the difference in the two measures can be seen in the comparison in Table 16 of the median 1966 income of all families and poor families by number of children:

On the other hand, the poverty measure confirms the fact that steady employment is more important than any other factor in keeping families out of poverty. In 1966, for example, the percentage of families in poverty in relation to the work experience and sex of the head, is shown in Table 17.

Poverty and Low Income. Between 1959 and 1966, the total number of persons in poor households as measured by the SSA index dropped by 9 million, from 38.9 million to 29.7 million and the per-

TABLE 16. COMPARISON OF MEDIAN INCOME OF ALL FAMILIES AND POOR FAMILIES, BY NUMBER OF CHILDREN, 1966

<i>No. of Children</i>	<i>All Families</i>	<i>Poor Families</i>	<i>Ratio</i>
Total families	\$7,436	\$1,784	24
With no children	6,740	1,461	22
1 child	7,776	1,533	20
2 children	7,945	1,976	25
3 children	8,108	2,445	30
4 children	7,750	3,005	39
5 children	7,467	3,338	45
6 or more	6,014	3,283	55

SOURCE: Orshansky, Mollie, "The Shape of Poverty in 1966," *Social Security Bulletin*, March, 1968, pp. 3-32.

TABLE 17. PERCENTAGE POOR OF ALL FAMILIES, BY WORK STATUS AND SEX OF HEAD, 1966

<i>Work Status</i>	<i>Percentage Poor</i>		
	<i>All Families</i>	<i>Male Head</i>	<i>Female Head</i>
Total	12.4	9.8	35.0
Didn't work	35.1	30.9	44.3
Ill, disabled	40.9	40.1	44.4
Other	33.1	26.9	44.3
Worked part year	21.2	17.1	43.8
Unemployed	20.0	17.9	44.0
Other	21.8	16.6	43.8
Worked all year	5.8	5.1	18.4

SOURCE: See Table 16.

centage of the population counted as poor dropped from 22 to 15. The number in the low-income group, however, dropped by less than a million more and the proportion with low incomes declined less sharply (Table 18). The decline in the proportion of the total group who were poor or in the low income category was less for nonwhites than for whites (Table 19).

The decline over the past eight years in the number and proportion poor has been greater for those who could work than for those who could not. Rising employment and earnings levels have moved many families and many children out of poverty. As a result, aged persons, families headed by a woman, and families with a disabled head now make up a larger proportion of the total poor.

TABLE 18. NUMBER AND PERCENTAGE DECLINE OF PERSONS IN POOR OR LOW-INCOME CATEGORIES, 1959 AND 1966

<i>Item</i>	<i>1959</i>	<i>1966</i>	<i>Percentage Decrease</i>
Number of persons (in millions)			
Poor	38.9	29.7	24
Near-poor	15.8	15.2	4
Low income	54.7	44.8	18
Percentage			
Poor	22.1	15.3	31
Near-poor	9.0	7.8	13
Low income	31.1	23.1	26

SOURCE: Reference Table H.

TABLE 19. PERCENTAGE DECLINE IN POOR OR LOW-INCOME CATEGORIES, BY COLOR, 1959 AND 1966

<i>Item</i>	<i>1959</i>	<i>1966</i>	<i>Percentage Decrease</i>
Percentage poor			
White	18.0	11.9	34
Nonwhite	54.6	40.6	28
Percentage low-income			
White	26.7	19.1	28
Nonwhite	65.4	53.0	19

SOURCE: Reference Table H.

The incidence of poverty was higher in both years for persons aged sixty-five and over than for any other age group (Table 20).

Regional and Geographic Distribution of the Poor and Near Poor. The proportion of the poor and low-income groups found in different regions of the country is, as noted earlier, similar to that of families in the lowest income fifth. The distributions for 1964 are shown in Table 21.

Even more interest attaches to the question of the extent to which poor persons are concentrated in central cities or in rural areas. For 1964 and 1966 special tabulations are available from which it was possible to derive the incidence of poverty in metropolitan and nonmetropolitan areas, in central cities and suburbs and for persons on farms and (1966) rural nonfarm areas.

As compared with 15 per cent of the total population poor in 1966, the poor constituted 16 per cent of those in central cities, 9 per cent of

TABLE 20. INCIDENCE OF POVERTY, BY AGE GROUP AND FAMILY STATUS, 1959 AND 1966

<i>Age group and family status</i>	<i>Number Poor in Millions</i>		<i>Percentage Poor</i>	
	<i>1959</i>	<i>1966</i>	<i>1959</i>	<i>1966</i>
All ages	38.9	29.7	22.1	15.3
Children under 18 ^a	16.6	12.5	26.1	17.9
In families with male head	12.6	8.0	21.7	12.9
In families with female head	4.0	4.5	72.6	60.6
Persons 18-64 ^b	16.4	11.9	16.9	11.2
Persons 65 and over	5.9	5.4	37.2	29.9
In families	3.4	2.7	28.4	20.5
Unrelated individuals	2.5	2.7	68.1	55.3

^a Never-married children in families.^b Includes ever-married persons under age 18.

SOURCE: Orshansky, Mollie, "Counting the Poor: Before and After Federal Income Support Programs," in *Old-Age Assurance*, submitted to Subcommittee on Fiscal Policy of U.S. Joint Economic Committee, 1968, Part II, pp. 177-231.

TABLE 21. PROPORTION OF POOR AND LOW-INCOME GROUPS, BY REGION, 1964

<i>Region</i>	<i>Families in Lowest Income Fifth</i>	<i>Poor Families</i>	<i>Low-Income Families</i>
Total families	9,567	(in millions) 6,832	10,665
		(percentages)	
All regions	100.0	100.0	100.0
Northeast	17.7	16.2	18.1
North Central	25.1	23.1	23.4
South	44.0	48.2	45.3
West	13.2	12.6	13.3

SOURCE: See Table 14.

those in the suburbs, 23 per cent both of those on farms and in rural nonfarm areas and 19 per cent of those in smaller cities and towns (population of 2,500 or over and not in metropolitan areas). (See Table 22.)

Again, it is important to distinguish between incidence—the risk of poverty for a particular group—and the number of poor persons. Of the 29.8 million poor persons in 1966, more than a third lived in central cities and close to half of all poor nonwhites were in central cities (Table 23).

TABLE 22. INCIDENCE OF POVERTY: PERCENTAGE OF PERSONS IN HOUSEHOLDS BELOW THE SOCIAL SECURITY ADMINISTRATION POVERTY LEVEL, BY COLOR AND RESIDENCE, 1964 AND 1966

<i>Color and type of residence</i>	<i>1964</i>	<i>1966</i>
<i>All persons</i>	18.0	15.4
White	14.1	12.0
Nonwhite	47.4	40.7
<i>Metropolitan areas</i>	13.5	12.1
Central cities	17.2	16.2
White	12.0	11.7
Nonwhite	38.0	33.0
Suburbs	10.0	8.6
White	8.7	7.6
Nonwhite	31.6	28.2
<i>Nonmetropolitan areas</i>	26.0	21.4
Farm	32.9	22.5
White	26.4	16.3
Nonwhite	75.4	70.1
<i>Other, total</i>	24.4	21.2
Rural nonfarm	n.a.	23.1
White	n.a.	19.0
Nonwhite	n.a.	56.3
Urban	n.a.	18.7
White	n.a.	14.2
Nonwhite	n.a.	58.0

NOTE: This table includes as poor some children aged 6 to 13 who lived as unrelated individuals in families to no member of which they were related. Other tables exclude these children because the Bureau of the Census does not normally collect data from unrelated individuals aged 14.

SOURCE: Orshansky, Mollie, "The Poor in City and Suburb, 1964," *Social Security Bulletin*, December, 1966, pp. 22-37; and Table 20.

Persons Poor on Basis of Own Income. The poverty and low-income estimates presented thus far—and those used in official estimates of poverty—relate to the noninstitutional population and measure poverty on the basis of total family income. A considerable number of older persons and some young families have incomes well below the poverty line but are living in families with total income above that line, although not necessarily much above. A large proportion of such families are themselves below the low-income line.

In 1966, there were 2.7 million persons aged sixty-five and over living alone and with incomes below the poverty level. Another 2.7 million aged persons lived in poor families, giving a total of 5.4 million noninstitutionalized aged persons who were living below the poverty

TABLE 23. NUMBER OF PERSONS IN POOR HOUSEHOLD, BY RESIDENCE, 1966

<i>Residence</i>	<i>Number of Persons in Poor Households</i>		
	<i>Total</i>	<i>White</i>	<i>Nonwhite</i>
		<i>(in millions)</i>	
United States	29.8	20.4	9.4
Central cities	9.4	5.4	4.0
Suburbs	5.8	4.8	.9
Farm	2.4	1.6	.9
Rural nonfarm	7.4	5.4	2.0
Small cities ^a	4.8	3.2	1.5

^a Urban nonmetropolitan areas.

NOTE: See Table 22.

SOURCE: See Table 20.

level. If one wants to know how many older persons could afford to live alone if they wanted to do so, however, the income of the aged individual or aged couple is the relevant measure. In 1966 there were 1.6 million aged persons whose own income was below the poverty line but who were living in households whose total income was above the line. (There are also some aged persons with enough income of their own to put them above the poverty line who share a household with relatives so poor that the total family income is below the poverty line. The number of such cases is much smaller, however.) Adding these persons and those in institutions, one gets a total count of poor aged persons in the United States in 1966 of 7.7 million. For the purpose of estimating the probable effect of income-maintenance payments, it is the larger figure which is likely to be more meaningful.

Changing the Poverty Line. An acceptable social minimum is obviously related to the general level of affluence of a society. In a dynamic economy it must therefore change over time. It is easy to reach agreement that what was an appropriate poverty measure in 1900 or 1933 is no longer relevant. It is also possible to get agreement that an acceptable social minimum in 1985 will be different from the poverty level of 1967. But it is very difficult to find a satisfactory method of gradually moving the level up from its present to a hypothetical future position. The difficulty is not simply that of measuring progress in a war with an ever-escalating goal. There are other conceptual problems involved.

The problems take on a somewhat different cast if one conceives of the poverty index as a statistical measure with its important character-

istic, the income-equivalency factor, or if one attempts to use it for direct program eligibility purposes. I am discussing it here as a welfare indicator—the purpose for which it was originally devised. In this context it can, of course, define a social policy goal—the goal of bringing every family up to the defined minimum. The basic question is whether the normative standard should move up proportionately with rising per capita income or by some lesser or greater amount.

The issues involved go in part to the question of optimum allocation of resources at different levels of GNP. They relate to the relative growth of public expenditures for services and for particular types of services. The weights for equivalencies may change as the absolute level of per capita income rises.

Thus far, the poverty and low-income indexes have been adjusted only for price changes. There would seem no question that the logic of a standard based on minimum food consumption needs requires a purchasing power—not a fixed dollar—measure. The change in the average poverty cut-off point for a family of four has been from \$3,060 in 1959 to \$3,335 in 1966. Clearly this adjustment thus far has had minor quantitative effect; its importance has been conceptual.

There has been considerable discussion of the desirability of other and more fundamental changes in the SSA poverty and low-income indexes. As now calculated, they rest on an assumption that families generally should not have to spend more than one-third of their total income on food (the proportion is somewhat smaller for one- and two-person families whose housing costs per capita are generally larger). This relationship, which is normative, but derives from analyses of consumer behavior, might well change as the general level of income rises. Richer families have more income for other things. It has been suggested also that explicit account might be taken of other items of consumption than food.

While further refinements in the index are desirable, particularly to the extent that they illuminate some of the interrelationships involved, it is worth noting that fairly substantial changes would be required to change the general picture as to who the disadvantaged groups are. The 1949 Joint Economic Committee study, using a very gross measure, listed the poverty groups as the farm poor, the aged, nonearners, unskilled workers, nonwhites, broken families, the poorly educated, and the disabled. The same groups appear in all the poverty and low-income lists and in analyses of income shares, although their proportions vary as does the total number of persons counted as poor.

One method of adjusting the poverty index over time that has at-

tracted considerable attention was suggested by Victor Fuchs.²⁰ He proposes that poverty be defined as family income less than half the median family income in any year. He is apparently more concerned with having an automatic adjustment of the index than with the level, since he has also said that the standard might be one-fourth or one-third of the median family income. Such a relative measure presumes or postulates a desired degree of inequality that would not vary with the growth of GNP. Intuitively there seems no reason to think that the degree of inequality that is regarded as optimum will remain fixed any more than a standard based on some kind of minimum budget.

Technically there are other difficulties with the measure. Fuchs recognizes that it would need to be varied by family size, but does not indicate how this would be done. The simple use of calculated medians for different family groups—even if adequate data for the purpose were available—would not suffice. Large families, particularly those with children, have lower incomes than smaller families. Hence to use the median, or a fraction of it, for such families would be to accept their present relative position. (The median family income in 1966 of families with two children was \$7,945; the poverty cut-off calculated by the SSA for such families was \$3,335. For families with six or more children, however, the actual median income was \$6,014 while the poverty cut-off point was \$5,430.) One could vary the median (by half or a third) for all families in relation to the ratio of equivalent levels of living inherent in the SSA poverty index. Alternatively, of course, one could adjust the poverty and low-income cut-off points in relation to the percentage change in median family, or per capita, income from year to year.

For trend data, there is a very real question as to how frequently and by what amounts the level of a poverty index should be raised. Obviously, as income levels rise, the number of persons with incomes below any given level will fall. By holding the poverty measure constant (in real dollars), one can see more readily which groups are moving up relative to others. Changing the level year-by-year might emphasize that goals should not lag behind resources. On the other hand, it would tend to blur changing relationships of subgroups.

A point worth keeping in mind is that the level of the cut-off point can emphasize or obscure differences in the incidence of "poverty" for subgroups. This is simply another way of saying that some people are poor but others are very, very poor. An example may illustrate the point. The incidence of poverty among nonwhites in 1966 was 3.4 times that of whites. If one moves up to the low-income level, the inci-

dence for nonwhites was 2.7 times that of whites. If one moves down the income scale the situation of nonwhites is relatively worse. In 1964, for example, the income deficit (the amount by which income was less than the poverty line) was less than \$500 for a third of the white families and one-tenth of the nonwhites; it was \$2,000 or more for 16 per cent of the white and for 26 per cent of the nonwhite families.

One is led back to an appreciation of the importance of income distribution. (Similar differences, of course, occur when one looks at income distribution in terms of tenths rather than fifths of the population.) A poverty line is one convenient way of summarizing the income distribution. Whatever changes are made over time in the minimum standard, it would seem desirable to have at least two levels of cut-off points—similar to the SSA poverty and low-income lines—in all years.

Summarizing the Distribution

Very early in the history of income distribution analysis, attempts were made to develop summary statistical measures of the degree of inequality in the entire distribution in order to facilitate time-to-time and place-to-place comparisons. The best known and most frequently used are the Lorenz curve and the Gini ratio or index of concentration. The curve is a plotting of the cumulative proportion of units arrayed in order from the smallest incomes to the largest against the cumulative share of aggregate income accounted for by these units. The Gini ratio is a measure of the area falling between the income curve and a straight line diagonal. Perfect equality would result in points along the diagonal; the area between the curve and the diagonal can thus provide an index of inequality. The ratio is expressed as a percentage of 1; the smaller the figure, the closer does the distribution it is measuring approach equality.

This measure and several of its variations have been criticized on grounds of the unreality of an assumption of either perfect equality or perfect inequality and the statistical consequences of this assumption. It has also been frequently pointed out that such measures are very insensitive to small changes in the income distribution. On the other hand, it is independent of the absolute amount or level of income.

The usefulness of any such single measure of concentration or dispersion lies primarily in the possibility it offers of testing the effect on over-all inequality of a great variety of actual or hypothetical variations in income patterns.

The Gini ratio has been used at a few points in this chapter to illustrate specific relationships. Gini ratios year by year 1947–1966

for all families and unrelated individuals, white and nonwhite families, white and nonwhite unrelated individuals and men and women (income of persons) are shown in Reference Tables C–F at the end of the chapter. A few general observations may be worth making.

Over time, the trends in the Gini ratio for any group will of course parallel the changes in the shares of aggregate income going to the lowest, next lowest, etc., fifth of the group. The drop in the Gini ratio for all families and individuals from .417 in 1947 to .402 in 1966 summarizes the total decrease in inequality that also resulted in a rise in the share of the lowest fifth between those years from 3.5 to 3.7 and a decline in the highest fifth from 45.8 to 43.8.

The Gini ratio can also summarize quickly the fact that there is more inequality in the distribution of money incomes of nonwhite than of white families (in 1966, the ratios were .385 and .343 respectively) and far greater inequality for unrelated individuals than for families.

Another indication of the effect of family groupings in reducing income inequalities can be seen in a comparison of the Gini ratios for family income and adult unit income. The adult unit count includes as separate units single individuals and secondary households living in families, usually because their own income is low. In their detailed analyses of income and wealth in the U.S. in 1959, James Morgan and his colleagues calculated the Gini ratio for family money income to be .385 and that for adult units .448.²¹

Morgan also calculated the effect of federal income taxes; in 1959 inequality in family income was reduced from .385 (total family money income) to .355 (income after federal income tax). Taking account of imputed rent and nonmoney transfers including food and housing provided by relatives brought the Gini ratio down a little further—to .346.

When the differential needs of different-sized families were taken into account, the over-all measure of inequality was further reduced to .309. As Morgan points out, many low-income families are small and many large families are headed by a middle-aged person at his earnings peak. The same relationships are involved as those which reduce the count of aged persons in poverty and increase the number of large families counted poor when one changes from a uniform to a variable measure of poverty. The shifts which result in a lesser degree of inequality on a family welfare-needs basis than on a straight family-income basis affect primarily the lower and middle segments of the income curve. In Morgan's calculations for 1959 income, they were

large enough to have a somewhat greater effect on the over-all measure of inequality than the allowance for federal income taxes.

Distribution of Other Income

To what extent are the inequalities in the distribution of money income and its insufficiency for some 15 per cent of the total population offset or reinforced by the availability of income in kind or by other institutional factors?

Nonmoney Income. Home-grown food, while of decreasing importance compared with earlier years, adds to the consumption of some families, primarily farm families. As noted earlier, the poverty index incorporates an adjustment to reflect the availability of home-produced food for farm families. Morgan and his colleagues found that in 1959, home-grown food added only \$40 a year on the average to the money income of families. There was relatively little variation by income class but such production was concentrated in farm families. The BLS Consumer Expenditure Survey for 1960-1961 covering both urban and rural families, shows essentially the same picture; the average value of home-produced food for all families in the survey was \$44; for those with money incomes of under \$1,000, the average value was \$53; for families with money income of \$15,000 and over, the average value of home-produced food was \$25 for the year.

Morgan also estimated the amount of real income from home improvements made by family members. These averaged \$140, ranging from \$22 for those with gross disposable incomes of \$500-999 to \$367 for those with incomes of \$10,000-14,999 and \$277 for incomes above \$15,000. Morgan comments: "Clearly considerations other than rational comparisons of employment opportunities must have been involved since these upper income units must have better earning opportunities in their jobs, and it is doubtful that they have more manual skills."²² Home production including both food and maintenance and repair work added about 3 to 4 per cent to gross disposable income. It did not, however, tend to offset differences in money income or to make the distribution of "welfare" any more equal.

More significant as an addition to welfare is the use value of owner-occupied homes. Home ownership is particularly important for one low-income group—the aged. In a survey of aged persons made in 1963, about two-thirds of the married couples reported some equity in a home, with the median amount of equity being \$10,000. Only

about a third of nonmarried aged men and women reported any equity in a home and the amounts were smaller. In general, those with low incomes were less likely to have any equity in a home and the amounts were much smaller than those with high money incomes.²³

The Federal Reserve Board survey of the assets and wealth of the civilian noninstitutional population at the end of 1962 found that 57 per cent of all consumer units had equities in owned homes and 42 per cent of these units owned their homes free of mortgage debt. The rate of home ownership was relatively high in the lower-income brackets, largely because of the concentration of older families in these income brackets. Forty per cent of consumer units with incomes of less than \$3,000 owned their homes and three-fourths of the group had no mortgage debt.²⁴ Inclusion of the rental value of an owned home in income thus increases the percentage share of the lower income groups and makes for greater equality in the over-all distribution.

Assets. To what extent are inequalities in the income distribution offset by asset holdings? To the extent that assets yield monetary returns these are, of course, included in current income. The question is usually raised in relation to proposals for income supplementation for low-income groups and reflects a conviction that families should convert assets to current income if additional income is needed.

From this point of view, an owned home may have little conversion value. The sale of an old home, particularly in the modest price ranges, is likely to yield less than the cost of rental housing. Liquid assets, which could be used to supplement current income, are held in significant amounts by middle- and high-income, not by low-income families.

The Federal Reserve Board study found that almost 80 per cent of the population had some liquid assets (defined to include savings and checking accounts and U.S. savings bonds). However, for 30 per cent of the population these amounted to less than \$500; and only 25 per cent had as much as \$2,000. Investment assets (stocks and other marketable securities, mortgage assets, investment real estate, business investments not managed by the unit and company savings plans) were even more heavily concentrated among those with large incomes. The distribution of total net worth was similar to that of money income, highly concentrated in the upper income groups. Only 1 per cent of families with income of less than \$3,000 had net worth of as much as \$50,000; of those with incomes of \$100,000 and over, 93 per cent had a net worth of more than \$500,000 and 37 per cent had more than \$1,000,000.

The question is often raised as to why this group, particularly older persons, should not use up their assets to supplement their current incomes. If one thinks in terms of modest amounts of savings, the question almost answers itself. The aged still face contingencies for which it is reasonable to retain some reserve. Medicare has removed a part—but only a part—of the threat of heavy medical care costs. Assets once used up are not replaceable when earnings have ceased. And the probability of rising prices could well lead a prudent man to question the wisdom of converting all his assets into fixed dollar annuities. Nevertheless, it is instructive to calculate what would be added to current income if assets were so used.

Such an analysis of potential income from assets was made on the basis of data from the SSA 1963 Survey of the Aged. Assets were assumed to be capable of earning a 4 per cent annual rate of return. The principal and appropriate interest amounts were divided over the expected remaining years of the unit's life (based on its age in 1963) in equal annual sums so that the assets would be exhausted at the end of the period. The annual amount computed in this way was added to current money income less the income actually received from assets.

If all assets other than equity in a home could have been converted to income prorated over the expected life of the holder in this way, the median income of the entire aged group would have been increased by about 10 per cent. The increases would have been larger for those with the higher money incomes. More than three-fourths of those with incomes of less than \$3,000 did not have asset holdings great enough to place their potential income in a higher \$1,000 income bracket than that in which their actual income fell.

The Federal Reserve Board study made a somewhat different calculation for consumer units of all ages with incomes below the poverty line. Equity in an owned home was assigned a use value of 4 per cent a year and liquid and investment assets were assumed to be used up over varying periods from one to five years. Allowance for home equity would have brought 6 per cent of the units above the poverty line. Allowance for home equity plus use of liquid assets would have kept 13 per cent of the units above poverty for five years or more—half of these units were headed by persons aged sixty-five and over. Another 8 per cent would have been kept above the poverty line for between one and four years. Sixty-one per cent of the total group, however, had no liquid or investment assets and for another thirteen per cent the amounts were too small to make up their income deficiency for as much as a year.

As suggested earlier, a more significant aspect of assets and wealth than the potential supplementation of low incomes is the control over the future and the security, the ability to adjust to economic and social change which they give. It is clear that a wealth income measure, however wealth was defined, would show greater inequality than a current income measure. This is true if one includes some measure of human wealth—i.e., education, training, good health. Inequalities in current income have a cumulative effect that is not easily counteracted.

Public Expenditures

With the growth of technology, increasing affluence, an expanding population and the appearance of large conurbations, it is inevitable that collective goods and services should become more important. The general functions of maintenance of law and order and national defense become more highly organized. The provision of public utilities—water, sewage disposal, air pollution control—transportation, housing and city planning, recreation and cultural activities require larger amounts of resources and depend increasingly on governmental action. Public education in this country has a long history, but the scope of publicly supported education has been vastly expanded as research and advanced training have become an indispensable factor in further economic growth. An organized system of income maintenance for the nonearning segment of the population is an economic necessity in modern society. And a variety of health, welfare, and manpower services are increasingly called for and provided in all economically developed countries.

What can be said about the effect of government activities on the distribution of real income? In fiscal 1967, public expenditures amounted to about 30 per cent of the Gross National Product and tax revenues were only slightly less. What groups in society are benefited the most?

There is no objective basis on which to allocate the benefits of general governmental services. Some have argued that the citizens of a country should share equally in the benefits of law and order, military defense, space exploration, etc. Others would distribute these expenditures more nearly in relation to the distribution of property. Two recent studies which have attempted to measure the net redistributive effect of all government activities will be discussed later.

There are certain government activities which have an explicitly redistributive or broad social welfare purpose. Such expenditures have grown at a rapid rate in the past three decades and now amount to

more than \$100 billion a year or more than 13 per cent of the GNP. While we have less information than would be desirable on the distribution of these expenditures by income class, rough estimates can be made with some degree of reliability.

Cash Transfer Payments. The cash benefits and payments under Social Security, public assistance, veterans and related programs are included in the money income of individuals and families. Though this income is already accounted for, it is useful to look a little more closely at its effect on the total distribution.

Total cash transfer payments under public programs in fiscal 1967 were \$46 billion or 7.5 per cent of aggregate personal income. OASDHI benefits represented half and all social insurance benefits (OASDHI, unemployment insurance, cash sickness in four states, workmen's compensation, and special systems for railroad workers and public employees) more than three-fourths of the total. Veterans and public assistance programs made up less than a fourth of the total.²⁵

Social insurance benefits are designed to provide a continuing source of income when earnings are interrupted or cease. Since they are also designed to provide a lesser amount than the individual was earning, they go to a large extent to persons in the lower income groups. By the nature of the programs they go also to aged persons, disabled, unemployed, and one group of families headed by a woman (survivor families)—all family types that are found in large numbers among the poor and low-income groups.

Most of the 5.4 million persons sixty-five and over shown as poor in 1966, in the estimates cited earlier, were receiving OASDHI benefits. At least as many aged persons, however, were above the poverty level because of their benefits. Even those below the poverty line were less far below than aged persons who were not receiving benefits. We have less adequate data relating to disabled and younger survivor beneficiaries; but it is clear that for these groups also the social insurance benefit does now or could represent the difference between poverty and a more acceptable level of living. With the increases in social security benefits resulting from the 1967 amendments, it is estimated that about 10 million beneficiaries have incomes above the poverty level only because of these benefits.

Special questions on the CPS for 1966 provided information on the amount of family income in 1965 that came from OASDHI benefits, from public assistance and from all other public programs as a group. The data have obvious limitations. Respondents in a survey do

not always identify correctly the program from which they are receiving benefits. In addition, the grouping of individuals into families on the basis of the situation at the time of interview (March, 1966) and the reporting of income for the previous year may result in more ambiguities when one is concerned with particular sources of income than with total income.

Nevertheless, certain relationships stand out clearly. Had it not been for public income payments, the number of households with income below the poverty line in 1965 would have been 15.9 million (26 per cent of all households) rather than the 11.2 million (19 per cent) shown as poor in the poverty series. The Social Security program alone kept 3½ million households out of poverty. While most of these were headed by a person aged sixty-five and over, almost 700,000 were headed by a younger person.

All public transfer payments combined prevented poverty for about one in three of the households headed by a person under age sixty-five who received such payments and for about one in two aged households. As one would expect, however, since such payments go primarily to families without current income from earnings, the proportion of aged families receiving such public transfer payments was much larger—six out of seven households—compared with younger families, where one in five households received some public income support.²⁶

Private employee benefit plans paid out cash benefits—pensions, group life, voluntary sickness insurance, paid sick leave—of \$7 billion in fiscal 1967. By and large these payments go to the middle- and upper-income groups. It is primarily the better organized and better paid workers who are covered by such plans; sick pay and supplementary unemployment benefits go to workers only temporarily out of the labor force, those who receive private pensions supplementing Social Security are generally not in the lowest income groups and the private pensions going to the high-paid executives can be very large.

Morgan found that money transfers substantially increased the degree of equality in the total income distribution in 1959. For money income other than transfer income, the Gini ratio for families was .419; with money transfers included the ratio dropped to .385. For adult units, the ratios were respectively .485 and .448.²⁷

Cash transfer payments under public programs are redistributive even after taking account of the contributions or taxes used to finance the benefits. Public assistance payments go only to very low-income groups and are financed in large measure from federal general revenues. Social insurance benefits go to persons who are no longer earning

and in general have reduced incomes while the contributions are paid by persons who are currently at work and by their employers. Whatever assumptions are made as to the incidence of the employer tax—whether one assumes it is born by employees in the form of lower wages or by consumers in higher prices or in part by reduced profits—the net effect of Social Security is to add most to low and medium incomes. A recent analysis measures the degree of progressivity for families grouped not by income but by a welfare ratio which takes into account equivalent levels of income for families of varying size. By this measure also, when taxes are set off against benefits the net benefit as a proportion of income is greater for families with the lowest welfare ratio for all the cash transfer programs.²⁸

Health Services. An increasing proportion not only of the costs of health research, medical facilities construction, and public health environmental sanitation activities, but also of personal health care services in the U.S. has in recent years been financed from public funds. In fiscal 1967, 30 per cent of the \$41.5 billion spent for personal health care came from public funds, as compared with 9 per cent in 1929. The new program of health insurance for the aged was primarily responsible for the increase in the public share from 22 per cent in fiscal 1966, but vendor medical payments under medical assistance and increased funds for maternal and child health services and medical care financed through the Office of Economic Opportunity also played a part.

Public expenditures for personal health care are made through a variety of programs, with federal funds of increasing importance, as the figures in Table 24 illustrate.

There are no data that offer a really satisfactory basis for distributing all public expenditures for personal health care by income class. A rough estimate of the proportion going for services to the poor can be made. All public assistance vendor medical payments, all OEO medical care expenditures, and essentially all maternal and child health services as well as a substantial proportion of medical costs under vocational rehabilitation go to persons who have passed a fairly stringent means test and can safely be classified as low income if not desperately poor. It is roughly estimated that about 30 per cent of the medical care benefits under Medicare—health insurance for the aged—go to persons with money incomes below the SAA poverty line.

About 50 per cent of the expenditures in municipal hospitals and state mental institutions are estimated to be for the poor and 55 per cent of the Veterans Administration hospital and medical care ex-

TABLE 24. PUBLIC EXPENDITURES FOR PERSONAL HEALTH CARE, 1949-1950 AND 1966-1967

<i>Type of Expenditure</i>	<i>1949-50</i>		<i>1966-67</i>	
	<i>Amount, in Billions</i>	<i>Federal Funds, in Percentage</i>	<i>Amount, in Billions</i>	<i>Federal Funds, in Percentage</i>
<i>Total</i>	\$2.1	47	\$12.6	61
OASDHI (health insurance for the aged)	—	—	3.2	100
Temporary disability insurance (medical benefits)	^a	0	.1	0
Workmen's compensation (medical benefits)	.2	3	.7	2
Public assistance (vendor medical payments)	.1	0	2.3	49
General hospital and medical care	.9	5	2.8	6
Defense Department hospital and medical care	.3	100	1.6	100
Military dependents' medical care	—	—	.1	100
Maternal and child health services	^a	67	.3	42
School health (educational agencies)	^a	0	.1	0
Veterans' hospital and medical care	6	100	1.2	100
Medical vocational rehabilitation	^a	69	.1	75
OEO health and medical care	—	—	.1	100

^a Less than 50 million.

SOURCE: Based on Social Security Administration, "Public and Private Expenditures for Health and Medical Care, Fiscal Years 1929-67," Research and Statistics Note No. 21, Washington, 1967.

penditures are assumed to be for persons with cash incomes below the poverty or at least below the low-income line. For lack of data and to be on the conservative side, all of the following program expenditures were allocated to the nonpoor: medical benefits under temporary disability insurance and workmen's compensation, Defense Department medical and hospital care, and military dependents' medical care and school health expenditures.

On this basis one could say that roughly \$6 billion or 46 per cent of all public expenditures for personal health care in fiscal 1967 paid for care received by poor persons. In fiscal 1966, the year before Medicare, \$4 billion paid for health services for the poor, but this

represented a larger proportion—49 per cent—of public personal health care expenditures. This decrease in the proportion of the personal health care dollar going to the poor in fiscal 1967 was due to the large Medicare outlay—now about one-fourth of the total public personal health care expenditure. The larger part of Medicare outlays paid for services for aged persons with incomes above the poverty line, in many cases because their cash Social Security benefits had moved them out of the poverty group. Many of these persons were still below the low-income line.

The proportion of all public personal health care expenditures that benefit persons with very low incomes is still considerably larger than in 1950 or even in 1960 (Table 25).

TABLE 25. PROPORTION OF ALL PUBLIC PERSONAL HEALTH CARE EXPENDITURES BENEFITING POOR PERSONS, SELECTED YEARS, 1929-1967

Fiscal Years	Total Personal Health Care Expenditures	Public Expenditures for Personal Health Care		
		Total	For Poor Persons	
			Amount	Per Cent of Total Public
1929	\$ 3.3	\$.3	\$.1	30
1940	3.5	.5	.2	36
1950	10.6	2.1	.8	39
1960	23.4	4.9	2.0	42
1966	36.8	8.1	4.0	49
1967	41.5	12.6	5.8	46

SOURCE: Merriam, Ida C., "Social Welfare Expenditures, 1929-67," *Social Security Bulletin*, December, 1967, pp. 3-16; and Social Security Administration, "Public and Private Expenditures for Health and Medical Care, Fiscal Years 1929-67," Research and Statistics Note No. 21, Washington, 1967.

The question of quality of services is unanswered by these figures. There is, of course, great variation in the quality of services received by persons who pay for care privately. The intent of the newer public programs is to assure equally high if not higher quality care to those (poor and nonpoor) entitled to services paid for from public funds. Evaluation of the extent to which this intent is being realized is beyond the scope of this chapter. From the point of view of income supplementation, however, it seems clear that public expenditures for personal medical care represent an increasingly significant addition to the consumption potential of lower-income families. Expenditures for per-

sonal health services now represent about 78 per cent of all public health expenditures (in this definition, sewage and waste disposal and water supplies are not included). No attempt has been made to distribute by income class expenditures for medical research, general public health activities or medical facilities construction. The question of redistribution—i.e., the source of the public funds so used—is discussed briefly below.

The Medicare program reflects a recognition that the cost of medical care is increasingly beyond the means of all but the wealthiest group in the population unless the cost can be averaged over periods of health and illness, and that for low-income groups like the aged even average costs may be more than they can pay out of current income. Direct payment for service at the time it is received, which accounted for 89 per cent of such expenditures in 1929 and 68 per cent in 1950, covered only 46 per cent in 1967. Thus more than half of all personal health care is now covered by third-party payments. About 56 per cent of third-party payments in 1967 were made under the public programs already discussed. About 90 per cent of the remainder represented payments under private health insurance obtained as a result of employment and largely paid for by employers.

For the future, the important question may be how health services can best be organized and health manpower and facilities expanded so that they can be available to all through whatever method or combination of methods they are paid for.

Public Education. To what extent does publicly provided education supplement the incomes of those in very low-, middle- and high-income brackets? Here again, one has to distinguish between the distributional effects of expenditures and the relative quality of services. Neither is easily measured. One of the most sophisticated and elaborate analyses was that carried out by Morgan and his associates in the Michigan study.

In this study, relating to 1959 incomes and expenditures, average public school expenditures per pupil were estimated for 133 separate areas and the benefits from public education received by each family in the sample determined by multiplying the per capita expenditure in its area by the number of children in the family who attended public school. The resulting benefits were then compared with money income, gross disposable income (defined to include nonmoney income such as the estimated rental value of owned homes) and the family welfare ratio (a measure of the relation of gross disposable income and needs).

For all three measures the ratio of educational benefits to income was greater the lower the income. "Even the average dollar amounts of benefits per family are greater for those with the lower levels of economic welfare. These are large families with more children in school. The benefits of free public education appear to go largely to those who would find it hardest to pay for them."²⁹ The analysis did show a difference in the expenditure per child in schools attended primarily by children of high income families (6 per cent above average) and those attended by children of very low-income families (13 per cent below average). The authors note also that the quality of education per dollar spent may be greater than these figures would indicate. An evaluation of the quality of education—whether for the poor or the rich—obviously requires a different approach.

Morgan and his colleagues also analyzed the burden of the property tax, still the major source of state and local school revenues. They concluded that the tax is not regressive when renters are included in the analysis and account is taken, in assessing ability to pay, of the imputed rental income of the owners' equity in his home, of federal income tax liability, and of family size and structure. These findings reinforce their conclusion that "free public education is a powerful redistributive force, both in the short run for the parents and later through its effect on the future earnings of the pupils," and that "non-whites benefit more both absolutely and relatively from free public education."³⁰

Public expenditures for higher education, on the other hand, probably benefit disproportionately families in the middle and higher income groups. The sons and daughters of these families are much more likely to go to college and graduate school. A recent study of expenditures for higher education under federal programs enacted in the past few years indicates, however, that these newer programs are benefiting primarily students from poor families, as was intended.³¹

Other Social Welfare Expenditures. Cash transfers and expenditures for health and education make up about 95 per cent of all social welfare expenditures included in the SSA series. A number of the remaining social service programs are directed primarily to low-income groups—child welfare, vocational rehabilitation, school lunch, institutional care and the newer manpower training and OEO community action programs. The addition to current real income is not large. What their impact on future income distribution may be is impossible to evaluate at this time.

The problem of housing deserves separate mention. Where and what kind of housing can be built is more and more a matter of collective decision. Discrimination in access to housing is one of the more difficult forms of discrimination to eliminate and yet central to many others. Public subsidies for housing represent only one aspect of social intervention in this area. Expenditures for public housing or rent subsidies—which go only to low-income groups—have been much smaller in the aggregate than the tax subsidies afforded to home owners through allowances for mortgage interest and real estate taxes as deductions on the federal income tax. Higher money incomes enable families to improve their housing as well as other forms of consumption. Where money income is inadequate, we are still searching for the public program or programs that can most effectively assure that housing needs are met. The problems are interwoven with the many other factors that affect the quality of urban life.

Redistributional Effects of Government Programs. To assess the extent of the benefit which the various income groups derive from public expenditures, one has to ask what groups give up the income—that is, pay the taxes or contributions—necessary to finance the transfer payments or the services.

For some purposes, one may want to measure the effect of tax payments—independent of the benefits they finance—on the level of living of the lowest and middle-income groups. Family budgets usually include an amount to cover direct taxes the family would have to pay. Indirect taxes are reflected in large measure in the prices of the items that make up the budget total. Neither the poverty or low-income level cut-off points discussed earlier include any allowances for direct taxes. Most families at the poverty level would pay no income tax, although many of them would pay Social Security and property taxes. Most families at the low-income level would pay federal income taxes. Both sets of income cut-off points must therefore be regarded as implicitly covering more than current consumption needs, at least under present tax policies.

Economists are far from agreement on the real impact of many types of taxes. A business tax or an employment tax, for example, may be passed on to consumers in the form of higher prices or back to employees in the form of lower wages than would otherwise have been paid. By and large the federal tax system, because of the weight of the federal income tax, is generally progressive—that is, those with higher

incomes pay somewhat higher rates of tax. The total tax system, however, with sales, excise and property taxes included, is probably more nearly U-shaped, taking relatively more from the lowest than from a fairly wide range of middle income groups and again relatively more from those in income levels above \$10,000 or \$15,000, though there is very little information as to the degree of progression at really high income levels.

Two recent studies have attempted to measure the net redistributive effects of all (federal, state, and local) government activities. Working with different sets of data and using different assumptions with regard to tax incidence and the distribution of the benefits of general government expenditures, W. I. Gillespie³² and George Bishop³³ nevertheless reach very similar over-all conclusions. (For his standard case, Gillespie allocates general expenditure proportionately to income, Bishop half on the basis of number of families and half on the basis of family income.) Both find that the lowest income groups receive substantial net benefits, that the middle-income groups about pay their own way and that families with incomes of \$10,000–15,000 and over contribute more than they receive. Gillespie's figures related to 1960, Bishop's to 1961. Both show substantial net benefits to families with incomes under \$2,000 and lesser but still significant redistribution through the \$3,000–3,999 family income class. Significant excess contributions begin with the \$10,000 and over class on Gillespie's method of calculation and \$15,000 and over on Bishop's.

Since 1961 there have been important changes both in expenditure programs and in taxes. With further study, it should also be possible to develop better bases for allocating various types of expenditures to income classes. The general picture of net redistribution from high to low-income groups with a middle group paying about what it receives might remain. The boundaries of low, middle, and high will certainly change, as may the extent of redistribution.

DIRECTIONS FOR FUTURE RESEARCH

This chapter has selected one measure of changes in welfare and briefly summarized some of the major trends that are revealed by existing statistics. Before turning to the question of directions for future research and analysis, it might be well to state explicitly some of the dimensions of welfare that have been deliberately omitted from this discussion.

Omissions in this Analysis

Except in the emphasis on equality as a coordinate goal, the question of social policy has been largely by-passed. Acceptance of reduction in inequality as a goal does seem to me to imply the selection of methods of combatting poverty that rest wherever possible on universalist and integrative policies.

There has been no attempt to quantify and only the briefest reference to the social costs of economic growth. The crowding, the loss of privacy, the noise, the excitement and the cultural variety of life in a big city weigh differently in the balances of different individuals. Perhaps the best one can say is that opportunities for individual choice and the ability to take protective measures are likely to be as unequally distributed as is money income.

Other social costs, such as occupational diseases and accidents, air and water pollution can be assigned dollar values (or disvalues) in the aggregate and may perhaps some day be worked into a set of national accounts.

Considerable attention has been given in recent years to leisure time as a measure of welfare. Certainly the reduction in average hours of work has to be balanced against the increase in average hours required to get to and from work. There also needs to be included in the equation the differential availability of transportation (dramatized by the situation in Watts, but a reality in every big city) and the pressures on the low-paid worker to take a second job.

Differential opportunities to spend income effectively were only briefly touched upon. Both private merchandising practices and public program limitations are involved. The frequently noted differential use of services such as health services may have much to do with the quality of services actually available to the poor and the opportunity cost involved in taking the time to get them.

Specific aspects of welfare can be measured in outcome terms—morbidity rates, rates of higher education, adequacy of housing, etc. Other chapters in this volume deal with some of these aspects, and with consumption in general. The value of income is, of course, the consumption and the security it makes possible. This discussion has dealt with the potentialities rather than with their specific actualization.

Two other dimensions of welfare have also been put aside—the cultural and aesthetic use of resources, and the international problems both of war and peace and of wealth and poverty among peoples and nations.

Future Studies and Analyses

One direction for future analysis is suggested by this list of omissions and the interactions it implies.

Within the limits set by this chapter, there is much to be done. Some of the analyses would require new data collection efforts. There are, however, existing masses of data that await and that warrant analysis.

Reference has already been made to several areas where knowledge is lacking or very limited. While much more can be done through cohort analysis of existing data, there is a place for longitudinal studies of particular individuals and families. Such studies in themselves might not tell us why some people move out of poverty—or into it—but they would give us a better idea than we have now as to what kind of people change circumstances.

Longitudinal studies are expensive and they require a long-term research commitment. With more attention and more funds for social science research, it should become possible to get additional support for such studies. A few longitudinal studies now under way will provide some relevant data. A series of five-year studies designed to focus on problems of employability of older men, middle-aged women, and persons entering the labor force is being supported by the Department of Labor. A longitudinal study of the retirement history of workers aged fifty-eight to sixty-three at time of first interview, which is just getting under way and which the Social Security Administration plans to continue for at least ten years, will focus on changing retirement incomes in relation to the individual's income during his working years.

Regional variations in income and their relation to variations in costs and in standards of living pose many questions for analysis. To what extent and in what ways are regional differences in median income and in income shares associated with different demographic characteristics of the population and the industrial structure of the region at a given time. To what extent can changes be accounted for by differential rates of economic growth and by population movement? How do the differences among major regions in income levels compare with the differences in all regions between central city, suburb and rural areas.

The question is frequently raised with respect to measures of minimum income, such as a subsistence budget or a poverty index, as to whether the minimum should vary by size of city or by region. If one could be sure one was measuring only differences in the cost of an

equivalent level of living, one might for some purposes want to introduce such variations. But the danger is great that one will become involved in a circular process. If lower apparent costs for lower levels of living—caused by inadequacies in current income—are incorporated in a reduced measure of need, our measures will have accepted and may help perpetuate income differentials that are not justified or desired.

There will always be room for improvement in measures of poverty. One can assume that "improvements" which win general acceptance will grow out of more detailed analyses of the relation between income and consumption and better understanding of the causal connections between poverty, discrimination, and other aspects of individual and social life and change.

At the upper end of the income scale, mention has been made of the need for more data and more analyses relating to the distributional effects of private employee benefit plans and of nonwage compensation such as expense accounts and various forms of consumption of very high income groups that is paid for by the employing organization and does not show up as individual income.

Studies of redistribution, which have suffered from a lack of empirical data, will become increasingly possible and useful as a result of data links now in process (in particular the linkage of CPS, IRS, and SSA data).

Another area in which much more research is needed is how to measure and evaluate public preferences for collective goods. A substantial start on such studies has been made at the University of Michigan Survey Research Center, but the area is large and difficult.

The importance of these newer areas should not be allowed to interrupt the continued development and improvement of data on money income and its distribution—from which we can continue to infer a great deal about the welfare of the United States.

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REFERENCE TABLES

TABLE A. TOTAL PERSONAL INCOME AND PER CAPITA
PERSONAL INCOME IN CURRENT AND CONSTANT
1967 DOLLARS, 1897-1967

Year	Personal Income (in Millions)	Per Capita Personal Income	
		Current Dollars	1967 Dollars ^a
1897-1901	\$ 14,300	\$ 191	\$ 841
1902-06	20,200	246	976
1907-11	26,700	295	1,073
1912-16	33,700	341	1,104
1917-21	62,500	592	1,165
1919	65,000	619	1,209
1920	73,400	689	1,178
1921	62,100	572	1,149
1922	62,000	563	1,188
1923	71,500	639	1,323
1924	73,200	641	1,341
1925	75,000	647	1,323
1926	79,500	677	1,384
1927	79,600	669	1,400
1928	79,800	662	1,371
1929	85,905	705	1,460
1930	77,015	625	1,333
1931	65,896	531	1,267
1932	50,150	401	1,084
1933	47,004	374	1,054
1934	53,966	427	1,124
1935	60,405	474	1,222
1936	68,602	535	1,368
1937	74,118	575	1,416
1938	68,346	526	1,318
1939	72,769	555	1,409
1940	78,285	590	1,482
1941	95,972	717	1,683
1942	122,901	908	1,896
1943	151,297	1,102	2,103
1944	165,276	1,190	2,156
1945	171,113	1,218	2,129
1946	178,730	1,259	2,044
1947	191,266	1,322	1,941
1948	210,216	1,428	1,986
1949	207,154	1,383	1,937
1950	227,619	1,495	2,062
1951	255,595	1,650	2,132
1952	272,455	1,729	2,186

TABLE A (cont.)

Year	Personal Income (in Millions)	Per Capita Personal Income	
		Current Dollars	1967 Dollars ^a
1953	\$288,163	\$1,799	\$2,243
1954	290,136	1,780	2,200
1955	310,889	1,874	2,311
1956	333,006	1,972	2,379
1957	351,101	2,041	2,390
1958	361,174	2,065	2,363
1959	383,528	2,157	2,437
1960	400,953	2,219	2,468
1961	416,814	2,268	2,498
1962	442,617	2,371	2,586
1963	465,487	2,457	2,650
1964	497,462	2,589	2,757
1965	537,760	2,764	2,909
1966	584,005	2,966	3,042
1967	626,400	3,146	3,146

^a Based on implicit price deflators for personal consumption expenditures (1958 = 100) from *Survey of Current Business*; adjustment to 1967 prices by the Office of Research and Statistics, Social Security Administration.

SOURCE: Personal income from *Survey of Current Business*, Office of Business Economics, Department of Commerce; population data for per capita personal income from *Current Population Reports*, Series P-25, U.S. Bureau of the Census.

TABLE B. FAMILY PERSONAL INCOME:^a MEAN INCOME, INCOME AT SELECTED POSITIONS, AND PERCENTAGE SHARE RECEIVED BY EACH FIFTH AND TOP 5 PER CENT OF FAMILIES AND UNRELATED INDIVIDUALS, SELECTED YEARS, 1929-1962

Year	Mean Income Before Tax	Income at Selected Positions ^b					Percentage Distribution of Aggregate Income									
		Upper Limit of Each Fifth					Lowest					Second				
		Lowest	Second	Middle	Fourth	Top 5	Lowest	Fifth	Per Cent	Top 5	Highest	Fourth	Fifth	Per Cent	Top 5	Per Cent
1929	\$2,335	—	\$1,340	\$1,860	\$2,810	\$ 5,690										
1935-36	1,631	\$ 560	930	1,380	2,120	3,910										
1941	2,209	740	1,370	2,040	2,940	5,010	4.1	4.1	9.2	12.5	19.3	13.8	14.1	20.9	54.4	30.0
1944	3,614	1,510	2,450	3,410	4,800	8,240	4.9	4.9	10.9	9.5	22.3	15.3	15.3	22.3	51.7	26.5
1946	3,940	1,660	2,680	3,650	5,130	9,180	5.0	5.0	11.1	10.9	22.2	16.2	16.2	22.2	48.8	24.0
1947	4,126	1,730	2,800	3,830	5,470	9,560	5.0	5.0	11.0	10.9	21.8	16.0	16.0	21.8	45.8	20.7
1950	4,444	1,810	3,020	4,160	5,850	10,200	4.8	4.8	10.9	11.0	22.0	16.0	16.0	22.0	46.1	21.3
1951	4,904	2,090	3,420	4,680	6,450	11,100	5.0	5.0	11.3	11.3	22.1	16.1	16.1	22.1	46.0	20.9
1952	5,122	2,170	3,610	4,910	6,760	11,480	4.9	4.9	11.4	11.3	22.3	16.5	16.5	22.3	46.1	21.4
1953	5,389	2,260	3,770	5,180	7,160	12,320	4.9	4.9	11.3	11.3	22.4	16.6	16.6	22.4	44.9	20.7
1954	5,356	2,200	3,700	5,120	7,100	12,350	4.8	4.8	11.1	11.3	22.5	16.6	16.6	22.5	44.7	20.5
1955	5,640	2,390	3,920	5,370	7,410	13,070	4.8	4.8	11.3	11.3	22.5	16.4	16.4	22.5	45.2	20.3
1956	6,007	2,540	4,170	5,680	7,960	13,960	4.8	4.8	11.3	11.3	22.3	16.3	16.3	22.3	45.2	20.3
1957	6,238	2,590	4,280	5,940	8,320	14,580	4.7	4.7	11.1	11.1	22.4	16.3	16.3	22.4	45.3	20.2

(In current dollars)

TABLE B (cont.)

Year	Mean Income Before Tax	Income at Selected Positions ^b					Percentage Distribution of Aggregate Income							
		Upper Limit of Each Fifth					Top 5 Per Cent		Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	Top 5 Per Cent
		Lowest	Second	Middle	Fourth	Top 5 Per Cent								
1958	\$6,284	\$2,610	\$4,290	\$5,970	\$8,450	\$14,700	4.7	11.0	16.3	22.5	45.5	20.0		
1959	6,615	2,690	4,500	6,320	8,910	15,740	4.6	10.9	16.3	22.6	45.6	20.0		
1960	6,819	2,770	4,660	6,530	9,270	16,240	4.6	10.9	16.4	22.7	45.4	19.6		
1961	6,930	2,790	4,710	6,650	9,460	16,460	4.6	10.9	16.3	22.7	45.5	19.6		
1962	7,262	2,940	4,950	6,960	9,900	17,230	4.6	10.9	16.3	22.7	45.5	19.6		

^a Family personal income represents the current income received by families and unrelated individuals from all sources, including wage and salary receipts (net of social insurance contributions), other labor income, proprietors' and rental income, dividends, personal interest income, and transfer payments. In addition to monetary income flows family income includes certain nonmoney items such as wages in kind, the value of food and fuel produced and consumed on farms, the net imputed rental value of owner-occupied homes, and imputed interest. Excludes the income received by institutional residents (including military personnel not living with their families), or retained by nonprofit institutions, private trust, pension, and welfare funds. The aggregate income covered in this table is smaller than the total income shown in Table A, because of these exclusions. The aggregate income table on the other hand, is larger than the income covered in Table C because of the inclusion of nonmoney income.

For further discussion of the definitions and basis of the estimates of personal income of the Office of Business Economics (OBE), Department of Commerce, as given in Tables A and B, and the income estimates based on the Current Population Survey (Tables C-H), see *Historical Statistics of the United States, Colonial Times to 1957*, Chapter G, General Notes, and Miller, Herman P., "Income Distribution in the United States," Appendix A, a 1960 Census Monograph, U.S. Bureau of the Census.

^b Rounded to nearest \$10.

SOURCE: U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1957*; and *Continuation to 1962 and Revisions*—Series G 120, G 113-117, G 100-105.

TABLE C. TOTAL MONEY INCOME OF FAMILIES AND UNRELATED INDIVIDUALS: GINI RATIO, MEAN INCOME, INCOME AT SELECTED POSITIONS, AND PERCENTAGE SHARE RECEIVED BY EACH FIFTH AND TOP 5 PER CENT, 1947-1966

Year	Gini Ratio	Mean Income	Income at Selected Positions					Percentage Distribution of Aggregate Income					
			Upper Limit of Each Fifth					Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Top 5 Per Cent	
			Lowest	Second	Middle	Fourth	Top 5 Per Cent						
			(In current dollars)										
1947	.417	\$3,224	\$1,138	\$2,211	\$3,190	\$4,568	\$7,773	3.5	10.5	16.7	23.5	45.8	19.0
1948	.408	3,298	1,156	2,324	3,334	4,726	7,874	3.5	10.7	17.2	23.9	44.7	17.9
1949	.414	3,194	1,060	2,239	3,245	4,652	7,643	3.2	10.5	17.2	24.1	45.0	17.9
1950	.414	3,411	1,114	2,409	3,460	4,939	8,104	3.1	10.5	17.4	24.1	44.9	18.0
1951	.400	3,804	1,393	2,777	3,897	5,483	8,642	3.4	11.1	17.6	24.1	43.7	17.6
1952	.411	4,016	1,406	2,863	4,047	5,725	8,990	3.4	10.8	17.2	24.0	44.6	18.7
1953	.407	4,252	1,440	3,066	4,399	6,138	9,760	3.2	10.7	17.6	24.5	44.0	17.5
1954	.415	4,200	1,342	2,967	4,339	6,170	9,904	3.1	10.3	17.4	24.6	44.6	17.7
1955	.411	4,466	1,475	3,179	4,598	6,498	10,141	3.3	10.5	17.4	24.5	44.3	18.0
1956	.404	4,793	1,649	3,453	4,981	6,953	10,926	3.4	10.7	17.6	24.5	43.8	17.4
1957	.397	4,861	1,679	3,555	5,150	7,082	10,989	3.4	10.8	17.9	24.8	43.1	16.7
1958	.401	5,040	1,744	3,638	5,291	7,341	11,654	3.5	10.7	17.7	24.7	43.5	16.9
1959	.408	5,431	1,842	3,831	5,635	7,878	12,572	3.4	10.4	17.5	24.5	44.2	17.6
1960	.411	5,686	1,921	3,987	5,830	8,234	13,106	3.4	10.4	17.4	24.3	44.5	18.0
1961	.419	5,855	1,913	4,014	5,958	8,526	13,891	3.3	10.1	17.1	24.4	45.2	18.3
1962	.408	6,049	2,027	4,225	6,226	8,869	14,189	3.5	10.3	17.3	24.5	44.3	17.3
1963	.407	6,304	2,122	4,416	6,538	9,278	14,620	3.5	10.4	17.4	24.7	44.0	17.1
1964	.406	6,568	2,246	4,555	6,808	9,735	15,722	3.5	10.3	17.3	24.7	44.1	17.1
1965	.404	6,945	2,384	4,888	7,199	10,179	17,533	3.6	10.5	17.4	24.6	44.0	17.1
1966	.402	7,425	2,549	5,243	7,674	10,826	19,243	3.7	10.5	17.4	24.6	43.8	16.8

SOURCE: Unpublished data from Current Population Survey, provided by U.S. Bureau of Census.

TABLE D. TOTAL MONEY INCOME OF PERSONS AGED 14 AND OVER BY SEX AND AGE:
GINI RATIO, MEAN INCOME, INCOME AT SELECTED POSITIONS, AND PERCENTAGE
SHARE RECEIVED BY EACH FIFTH AND TOP 5 PER CENT, SELECTED YEARS, 1947-1966

Year, Sex, and Age	Gini Ratio	Mean In- come	Income at Selected Positions					Percentage Distribution of Aggregate Income									
			Upper Limit of Each Fifth					Top 5 Per Cent									
			Lowest	Second	Middle	Fourth	Fifth		Lowest	Second	Middle	Fourth	Highest	Top 5			
1947																	
Men																	
14 to 19	.413	\$2,636	\$ 939	\$1,860	\$2,587	\$ 3,489		\$ 5,853	3.7	10.7	16.9	22.6	46.1	21.3			
	.431	746	199	397	719	1,296		2,048	6.6	6.5	13.3	25.2	48.5	16.2			
20 to 24	.323	1,641	758	1,296	1,828	2,416		3,315	5.8	12.5	18.9	25.3	37.6	12.1			
25 to 34	.304	2,704	1,461	2,183	2,769	3,484		5,126	6.7	14.0	18.1	22.6	38.6	15.7			
35 to 44	.372	3,344	1,628	2,437	3,198	4,164		7,281	5.6	12.3	17.2	21.5	43.5	20.4			
45 to 54	.406	3,329	1,464	2,323	3,077	4,090		7,602	4.8	11.8	16.1	21.0	46.3	22.8			
55 to 64	.408	2,795	1,090	2,014	2,722	3,674		6,235	4.2	11.1	16.9	22.5	45.3	21.0			
65 and over	.597	1,906	369	757	1,329	2,354		5,279	2.6	6.0	9.9	19.0	62.6	37.2			
Women	.452	1,290	333	757	1,329	1,967		2,968	3.8	7.7	15.6	24.8	48.1	20.7			
14 to 19	.415	686	189	379	668	1,203		1,855	7.1	7.1	12.7	26.0	47.1	15.1			
20 to 24	.349	1,226	427	955	1,463	1,895		2,442	4.0	10.7	19.5	27.7	38.1	12.3			
25 to 34	.376	1,321	444	944	1,492	2,040		2,821	3.7	10.3	17.9	27.1	41.0	14.5			
35 to 44	.395	1,465	449	1,033	1,622	2,246		3,381	3.3	9.9	18.5	25.9	42.4	15.5			
45 to 54	.438	1,517	394	965	1,619	2,308		3,420	3.2	8.0	17.4	25.5	45.8	18.9			
55 to 64	.473	1,290	301	687	1,282	2,047		3,413	3.8	6.5	14.9	25.1	49.7	20.9			
65 and over	.587	1,057	213	425	723	1,201		2,845	4.6	4.6	10.9	16.1	63.8	39.0			

TABLE D (cont.)

Year, Sex, and Age	Gini Ratio	Mean In- come	Income at Selected Positions					Percentage Distribution of Aggregate Income							
			Upper Limit of Each Fifth					Top 5 Per Cent	Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	Top 5 Per Cent	
			Lowest	Second	Middle	Fourth	Fifth								
1953			(In current dollars)												
Men	.406	\$3,549	\$1,145	\$2,624	\$3,737	\$5,039	\$7,744	3.1	10.8	18.1	24.4	43.7.	18.4		
14 to 19	.496	803	180	360	615	1,307	2,771	6.1	6.1	9.2	21.8	56.9	20.8		
20 to 24	.363	2,285	959	1,656	2,441	3,461	5,012	4.4	11.7	17.4	25.9	40.6	14.2		
25 to 34	.283	3,909	2,300	3,306	4,119	5,189	7,064	7.0	14.6	19.0	23.6	35.8	13.3		
35 to 44	.316	4,435	2,480	3,538	4,436	5,795	9,109	6.4	13.9	17.8	23.0	38.9	15.4		
45 to 54	.372	4,382	2,090	3,308	4,318	5,681	8,920	4.9	12.4	17.4	22.7	42.6	19.7		
55 to 64	.412	3,796	1,439	2,777	3,737	4,913	8,216	3.7	11.4	17.2	22.4	45.3	21.2		
65 and over	.580	2,217	506	885	1,534	3,029	5,770	2.3	6.6	10.2	19.8	61.0	33.4		
Women	.471	1,583	375	840	1,621	2,606	3,885	3.1	7.3	14.7	26.5	48.4	18.8		
14 to 19	.455	686	175	349	564	1,085	2,223	7.1	7.1	9.5	23.0	53.2	19.1		
20 to 24	.363	1,595	502	1,190	1,931	2,563	3,333	3.2	10.9	19.2	28.3	38.5	11.3		
25 to 34	.421	1,840	480	1,162	2,073	3,012	4,048	2.7	8.8	17.7	27.3	43.6	15.5		
35 to 44	.410	1,812	502	1,203	2,016	2,924	4,084	2.8	9.6	17.4	26.6	43.6	15.4		
45 to 54	.442	1,968	476	1,219	2,154	3,056	4,298	2.5	8.6	17.2	25.9	45.8	18.7		
55 to 64	.468	1,602	431	879	1,550	2,483	4,305	3.1	8.3	14.4	24.7	49.6	19.8		
65 and over	.537	1,071	260	521	796	1,278	2,990	4.6	5.5	13.7	16.6	59.7	34.1		

(In current dollars)

TABLE D (cont.)

Year, Sex, and Age	Gini Ratio	Mean In- come	Income at Selected Positions					Percentage Distribution of Aggregate Income									
			Upper Limit of Each Fifth					Top 5 Per Cent	Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	Top 5 Per Cent			
			Lowest	Second	Middle	Fourth	Top 5 Per Cent										
(In current dollars)																	
1957																	
Men	.421	\$4,068	\$1,203	\$2,936	\$4,333	\$5,820	\$9,063	2.9	10.0	18.0	24.7	44.4	18.7				
14 to 19	.477	678	164	328	491	974	2,363	7.2	7.2	7.2	21.4	57.0	23.6				
20 to 24	.358	2,614	1,051	1,989	2,919	4,061	5,626	4.3	11.3	18.5	26.7	39.3	12.6				
25 to 34	.285	4,552	2,658	3,925	4,857	5,969	8,628	6.9	14.6	19.3	23.4	35.9	12.6				
35 to 44	.334	5,300	2,955	4,224	5,297	6,735	10,442	6.0	13.8	18.1	22.1	40.0	17.2				
45 to 54	.389	5,227	2,313	3,918	5,125	6,726	11,313	4.4	12.0	17.4	22.2	43.9	20.0				
55 to 64	.417	4,295	1,477	3,022	4,305	5,842	9,651	3.4	10.6	17.1	23.2	45.6	20.9				
65 and over	.482	2,233	707	1,146	1,809	3,255	6,053	4.5	7.9	12.7	21.3	53.5	23.9				
Women	.486	1,713	370	848	1,694	2,963	4,512	2.8	6.6	14.0	26.2	50.3	18.6				
14 to 19	.494	690	155	310	465	1,080	2,482	7.1	7.1	7.1	19.8	59.0	22.5				
20 to 24	.386	1,776	538	1,229	2,078	2,974	3,837	3.1	10.0	18.4	27.6	40.9	12.2				
25 to 34	.428	1,969	444	1,220	2,225	3,362	4,597	2.5	8.1	17.4	28.1	43.9	14.2				
35 to 44	.470	2,187	474	1,318	2,242	3,385	4,956	2.2	8.1	16.3	25.2	48.1	20.7				
45 to 54	.429	2,121	507	1,354	2,289	3,446	5,269	2.4	8.6	17.2	26.7	45.1	15.5				
55 to 64	.486	1,884	432	945	1,814	3,144	5,336	2.6	7.0	14.4	25.5	50.4	18.9				
65 and over	.466	1,054	330	618	864	1,351	2,979	4.6	9.2	13.9	18.7	53.5	27.0				

TABLE D (cont.)

Year, Sex, and Age	Gini Ratio	Mean In- come	Income at Selected Positions					Percentage Distribution of Aggregate Income								
			Upper Limit of Each Fifth					Top 5 Per Cent	Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	Top 5 Per Cent		
			Lowest	Second	Middle	Fourth	Fifth									
1964																
Men																
14 to 19	.429	\$5,329	\$1,446	\$3,586	\$5,634	\$7,808	\$12,841	2.6	9.5	17.5	24.8	45.7	18.6			
20 to 24	.514	773	169	339	524	1,108	2,832	6.3	6.3	7.3	20.5	59.5	26.4			
25 to 34	.391	3,172	1,015	2,289	3,535	5,042	6,868	3.3	10.3	18.5	26.9	41.0	13.5			
35 to 44	.294	6,073	3,454	5,065	6,418	8,092	11,616	6.9	14.2	19.0	23.6	36.3	13.3			
45 to 54	.321	7,211	3,905	5,746	7,249	9,524	15,298	6.4	13.6	18.1	22.7	39.2	15.2			
55 to 64	.350	6,914	3,382	5,342	6,837	9,197	15,663	5.4	13.0	17.3	22.8	41.5	16.7			
65 and over	.418	5,884	2,016	4,070	5,876	8,188	14,133	3.6	10.5	16.7	23.7	45.6	19.1			
Women																
14 to 19	.534	3,534	1,100	1,642	2,386	4,230	10,316	4.3	7.6	11.3	17.6	59.2	33.1			
20 to 24	.506	2,205	451	1,001	2,086	3,712	5,984	2.2	6.4	13.6	25.8	52.1	20.6			
25 to 34	.496	679	154	307	461	933	2,654	7.2	7.2	7.2	18.5	59.9	25.1			
35 to 44	.421	2,165	523	1,355	2,484	3,697	5,033	2.4	8.4	17.5	28.8	42.8	13.4			
45 to 54	.452	2,420	485	1,422	2,658	4,170	5,864	2.0	7.6	16.8	28.2	45.4	15.2			
55 to 64	.442	2,659	578	1,639	2,933	4,345	6,521	2.2	8.1	16.9	27.1	45.7	16.1			
65 and over	.437	2,857	751	1,860	2,984	4,598	7,170	2.6	8.9	16.7	26.2	45.6	16.0			
	.487	2,599	592	1,310	2,547	4,315	7,162	2.5	7.0	14.5	25.7	50.3	18.9			
	.487	1,556	568	824	1,153	1,832	4,451	4.9	9.4	11.8	17.9	56.0	30.1			

TABLE D (cont.)

Year, Sex, and Age	Gini Ratio	Mean In- come	Income at Selected Positions					Percentage Distribution of Aggregate Income						
			Upper Limit of Each Fifth					Top 5 Per Cent	Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	Top 5 Per Cent
			Lowest	Second	Middle	Fourth	Top 5 Per Cent							
1966			(In current dollars)											
Men	.434	\$6,005	\$1,657	\$4,097	\$6,330	\$8,760	\$14,127	2.6	9.5	17.5	24.7	45.7	18.9	
14 to 19	.531	941	198	397	721	1,378	3,320	2.1	6.3	11.2	21.0	59.4	26.5	
20 to 24	.383	3,722	1,269	2,604	4,116	5,859	8,031	3.7	10.4	18.0	26.7	41.2	13.9	
25 to 34	.278	6,886	4,099	5,826	7,194	8,971	12,954	7.5	14.6	18.9	23.3	35.7	12.8	
35 to 44	.314	8,193	4,529	6,493	8,174	10,707	18,437	6.9	13.7	17.8	22.7	38.9	15.2	
45 to 54	.361	8,169	4,046	6,100	7,790	10,469	19,481	5.7	12.7	17.0	21.9	42.7	18.9	
55 to 64	.414	6,857	2,464	4,816	6,639	9,267	17,616	3.8	10.8	16.8	22.6	46.0	20.1	
65 and over	.490	3,427	1,154	1,780	2,615	4,356	9,255	4.5	8.5	12.7	19.4	54.9	27.9	
Women	.492	2,400	508	1,169	2,327	4,064	6,602	2.1	6.8	14.0	26.2	50.8	19.0	
14 to 19	.520	798	169	338	526	1,209	3,028	2.1	6.4	10.6	20.7	60.2	25.0	
20 to 24	.424	2,363	561	1,484	2,736	3,974	5,515	2.3	8.3	17.9	28.2	43.3	14.1	
25 to 34	.443	2,763	596	1,714	3,113	4,561	6,684	2.0	8.1	17.3	27.4	45.2	15.6	
35 to 44	.432	2,964	738	1,971	3,231	4,805	7,131	2.2	8.9	17.6	26.5	44.8	15.6	
45 to 54	.432	3,206	874	2,110	3,369	5,077	7,797	2.6	9.1	17.2	26.0	45.2	16.5	
55 to 64	.473	2,906	701	1,502	2,985	4,678	7,639	2.4	7.4	15.3	25.8	49.1	18.8	
65 and over	.463	1,633	619	913	1,291	2,005	4,879	4.6	9.4	13.4	19.2	53.4	26.2	

SOURCE: Data for 1947, 1953, 1957, and 1964 from Henson, Mary F., "Trends in the Income of Families and Persons in the United States, 1947-1964," Technical Paper No. 17, U.S. Bureau of the Census, Table 36; data for 1966, unpublished data furnished by U.S. Bureau of the Census.

TABLE E. TOTAL MONEY INCOME OF FAMILIES BY COLOR OF HEAD: GINI RATIO, MEAN INCOME, INCOME AT SELECTED POSITIONS, AND PERCENTAGE SHARE RECEIVED BY EACH FIFTH AND TOP 5 PER CENT, 1947-1966

Year and Color of Head	Gini Ratio	Mean Income	Income at Selected Positions					Percentage Distribution of Aggregate Income									
			Upper Limit of Each Fifth					Lowest					Middle				
			Lowest	Second	Middle	Fourth	Top 5 Per Cent	Fifth	Second	Fifth	Lowest	Fifth	Fifth	Second	Fifth	Fourth	Top 5 Per Cent

<i>White</i>																	
1947	.363	\$3,718	\$1,756	\$2,714	\$3,603	\$ 5,072	\$ 8,383	5.5	12.2	16.9	22.8	42.6	17.4	12.2	16.9	22.8	42.6
1948	.361	3,842	1,844	2,877	3,785	5,256	8,581	5.4	12.4	17.3	23.1	41.9	16.9	12.3	17.3	23.1	41.9
1949	.367	3,729	1,715	2,784	3,699	5,199	8,330	5.0	12.3	17.3	23.4	42.0	16.6	12.3	17.3	23.4	42.0
1950	.372	3,991	1,836	3,025	3,961	5,302	8,877	4.9	12.3	17.2	23.5	42.1	17.3	12.3	17.2	23.5	42.1
1951	.352	4,398	2,154	3,368	4,370	5,944	9,339	5.5	12.7	17.5	23.0	41.3	16.6	12.7	17.5	23.0	41.3
1952	.359	4,722	2,282	3,559	4,708	6,325	9,793	5.3	12.6	17.4	23.1	41.6	17.6	12.6	17.4	23.1	41.6
1953	.353	4,916	2,354	3,824	5,048	6,778	10,495	5.0	12.8	18.0	23.6	40.6	15.7	12.8	18.0	23.6	40.6
1954	.359	4,909	2,235	3,741	4,984	6,796	10,703	4.9	12.4	17.5	23.8	41.4	16.2	12.4	17.5	23.8	41.4
1955	.358	5,228	2,465	4,005	5,306	7,104	10,917	5.1	12.6	17.9	23.3	41.1	16.7	12.6	17.9	23.3	41.1
1956	.347	5,619	2,729	4,324	5,698	7,638	11,874	5.4	12.8	17.9	23.4	40.6	16.2	12.8	17.9	23.4	40.6
1957	.345	5,719	2,813	4,467	5,829	7,747	11,854	5.5	12.9	18.1	23.5	40.1	15.7	12.9	18.1	23.5	40.1
1958	.340	5,911	2,874	4,577	5,996	7,965	12,500	5.6	12.8	17.6	23.5	40.5	15.6	12.8	17.6	23.5	40.5
1959	.349	6,367	3,028	4,900	6,437	8,693	13,540	5.5	12.5	17.9	23.2	40.8	16.1	12.5	17.9	23.2	40.8
1960	.357	6,676	3,105	5,083	6,697	9,079	14,203	5.3	12.4	17.5	23.3	41.5	16.8	12.4	17.5	23.3	41.5
1961	.364	6,933	3,146	5,157	6,917	9,446	15,367	5.2	12.2	17.1	23.3	42.2	17.3	12.2	17.1	23.3	42.2
1962	.350	7,112	3,331	5,381	7,148	9,833	15,839	5.5	12.5	17.5	23.4	41.2	15.9	12.5	17.5	23.4	41.2
1963	.348	7,420	3,484	5,628	7,548	10,286	16,856	5.5	12.6	17.7	23.6	40.7	15.4	12.6	17.7	23.6	40.7
1964	.349	7,732	3,610	5,867	7,875	10,702	18,273	5.6	12.3	17.7	23.8	40.6	15.0	12.3	17.7	23.8	40.6
1965	.347	8,200	3,881	6,239	8,285	11,170	19,911	5.6	12.5	17.7	23.4	40.8	15.5	12.5	17.7	23.4	40.8
1966	.343	8,749	4,193	6,671	8,870	11,940	21,115	5.7	12.6	17.7	23.5	40.5	15.1	12.6	17.7	23.5	40.5

TABLE E (cont.)

Year and Color of Head	Gini Ratio	Mean Income	Income at Selected Positions					Percentage Distribution of Aggregate Income																																							
			Upper Limit of Each Fifth					Top 5					Lowest					Second					Middle					Fourth					Highest					Top 5									
			Lowest	Second	Middle	Fourth	Top 5 Per Cent	Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Top 5 Per Cent	Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	Top 5 Per Cent	Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	Top 5 Per Cent																							
Nonwhite																																															
1947	.406	\$2,016	\$ 760	\$1,319	\$1,927	\$2,937	\$ 5,398	4.8	10.2	15.7	23.6	45.8	17.0																																		
1948	.406	2,104	771	1,402	2,148	3,144	5,215	4.3	10.1	16.9	24.4	44.3	16.6																																		
1949	.415	1,965	660	1,303	2,023	2,918	4,921	3.8	9.9	16.6	24.6	45.1	17.1																																		
1950	.402	2,128	723	1,479	2,254	3,178	5,200	3.8	9.7	17.9	25.1	43.4	16.6																																		
1951	.405	2,368	827	1,625	2,458	3,577	5,568	3.8	10.3	16.9	25.3	43.8	16.1																																		
1952	.365	2,639	1,122	1,945	2,733	3,622	6,019	5.0	11.4	17.9	23.7	41.9	16.0																																		
1953	.393	2,890	1,038	2,033	2,992	4,378	7,117	3.9	10.7	17.0	25.1	43.4	15.2																																		
1954	.402	2,758	929	1,848	2,990	4,183	6,685	3.6	10.0	17.2	25.8	43.4	15.5																																		
1955	.388	2,890	1,043	2,013	3,129	4,423	6,733	4.0	10.3	17.8	25.5	42.4	14.3																																		
1956	.396	3,073	1,092	2,127	3,213	4,661	7,340	3.9	10.5	17.2	25.3	43.1	15.0																																		
1957	.405	3,241	1,078	2,193	3,427	5,087	7,813	3.6	10.2	16.9	26.0	43.3	15.0																																		
1958	.417	3,351	1,169	2,172	3,433	5,033	8,141	4.0	9.9	16.2	25.0	44.9	17.0																																		
1959	.414	3,523	1,215	2,257	3,559	5,387	8,627	4.1	9.5	16.5	25.3	44.7	16.2																																		
1960	.410	3,913	1,323	2,515	3,959	6,046	9,951	3.9	9.6	16.4	25.4	44.7	16.2																																		
1961	.414	4,031	1,409	2,489	3,988	6,045	10,353	4.0	9.6	15.9	24.5	46.0	17.4																																		
1962	.403	4,020	1,487	2,713	4,019	5,959	10,114	4.2	10.6	16.6	24.2	44.5	16.3																																		
1963	.403	4,340	1,655	2,806	4,294	6,517	10,462	4.4	10.2	16.1	24.6	44.7	17.2																																		
1964	.399	4,772	1,866	3,155	4,696	7,060	11,492	4.5	10.5	16.2	24.3	44.6	16.7																																		
1965	.388	4,903	1,949	3,308	4,915	7,427	11,813	4.6	10.7	16.5	24.7	43.5	15.5																																		
1966	.385	5,526	2,175	3,724	5,637	8,299	12,907	4.7	10.7	16.8	24.9	42.9	15.4																																		

NOTE: These figures are estimates derived from a sample survey of households (Current Population Survey) and, therefore, are subject to sampling variability. Moreover, as in all field surveys of income, the figures are subject to errors of response and non-reporting. See Table B, footnote a, for references to discussion of definitions and coverage of different income series.

SOURCE: 1947-1962, data from Henson, Mary F., "Trends in the Income of Families and Persons in the United States, 1947-1964," Technical Paper No. 17, U.S. Bureau of Census, Table 23; 1963-66, unpublished data from U.S. Bureau of the Census.

TABLE F. TOTAL MONEY INCOME OF UNRELATED INDIVIDUALS BY COLOR: GINI RATIO, MEAN INCOME, INCOME AT SELECTED POSITIONS, AND PERCENTAGE SHARE RECEIVED BY EACH FIFTH AND TOP 5 PER CENT, 1947-1966

Year and Color	Gini Ratio	Mean Income	Income at Selected Positions					Percentage Distribution of Aggregate Income									
			Upper Limit of Each Fifth					Top 5 Per Cent	Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	Top 5 Per Cent			
			Lowest	Second	Middle	Fourth	Top 5										
															(In current dollars)		
White			\$ 325	\$ 751	\$1,445	\$2,400	\$ 4,117	2.7	5.3	11.3	21.3	59.4	34.2				
1947	.574	\$1,798															
1948	.481	1,542	377	804	1,442	2,464	4,045	3.2	7.5	13.4	25.1	50.9	20.6				
1949	.475	1,612	382	832	1,596	2,623	4,253	3.0	7.3	14.0	26.1	49.6	19.4				
1950	.484	1,658	378	819	1,635	2,809	4,276	2.9	7.0	13.5	26.6	49.9	19.4				
1951	.476	1,789	408	868	1,866	3,106	4,584	2.7	7.0	14.1	27.5	48.6	17.9				
1952	.479	2,071	527	1,054	2,061	3,309	5,121	2.7	7.5	14.8	25.5	49.5	20.7				
1953	.522	2,227	478	966	2,101	3,310	5,439	2.2	6.4	13.6	23.8	53.9	26.2				
1954	.489	1,975	491	932	1,854	3,238	5,454	2.5	7.4	13.4	25.5	51.2	20.2				
1955	.516	2,206	530	996	1,960	3,386	5,643	2.5	6.6	13.0	24.1	53.6	24.9				
1956	.488	2,196	570	1,044	1,986	3,658	5,752	3.0	7.1	13.3	25.6	51.0	20.4				
1957	.482	2,381	599	1,177	2,209	3,954	6,446	2.9	7.2	13.6	25.2	51.1	19.9				
1958	.506	2,481	586	1,178	2,261	4,033	6,781	2.6	7.0	13.1	25.2	52.1	21.4				
1959	.515	2,600	599	1,233	2,300	4,155	6,868	2.6	6.9	12.9	24.2	53.4	23.4				
1960	.487	2,705	679	1,328	2,565	4,414	6,966	3.0	7.1	13.8	25.7	50.5	20.3				
1961	.506	2,900	708	1,380	2,529	4,582	7,694	2.9	6.8	13.1	24.2	53.0	23.1				
1962	.488	2,956	793	1,411	2,559	4,863	8,117	3.3	7.2	12.9	24.5	52.1	20.9				
1963	.502	3,003	752	1,429	2,561	4,969	8,418	2.7	7.2	12.8	24.8	52.6	20.8				
1964	.506	3,272	812	1,484	2,917	5,191	8,663	2.6	6.9	13.0	24.7	52.8	22.9				
1965	.486	3,379	916	1,674	3,139	5,497	9,201	2.7	7.6	13.6	25.1	51.0	20.3				
1966	.498	3,638	1,032	1,753	3,217	5,644	10,028	2.8	7.4	13.2	23.8	52.7	22.7				

TABLE F (cont.)

Year and Color	Gini Ratio	Mean Income	Income at Selected Positions					Percentage Distribution of Aggregate Income									
			Upper Limit of Each Fifth					Top 5 Per Cent	Lowest Fifth	Second Fifth	Middle Fifth	Fourth Fifth	Highest Fifth	Top 5 Per Cent			
			Lowest	Second	Middle	Fourth	Top 5 Per Cent										
Nonwhite																	
1947	.447	\$ 980	\$258	\$ 527	\$ 965	\$1,548	\$2,683	5.0	5.8	14.9	25.5	48.7	18.7				
1948	.448	1,056	286	597	981	1,748	3,098	4.6	7.2	13.9	25.8	48.6	16.7				
1949	.423	1,054	301	629	1,019	1,793	2,798	4.6	8.0	14.6	26.8	46.1	15.3				
1950	.475	1,172	277	589	1,078	2,047	3,353	4.2	6.0	13.6	25.8	50.4	18.0				
1951	.446	1,259	311	688	1,393	2,091	3,047	3.9	7.0	14.7	27.9	46.5	17.1				
1952	.445	1,359	378	813	1,318	2,144	3,462	3.6	8.6	15.3	24.3	48.2	19.1				
1953	.419	1,504	467	884	1,535	2,565	3,449	3.2	9.4	15.1	27.5	44.7	15.0				
1954	.525	1,489	347	697	1,166	2,239	3,723	3.3	7.1	11.1	23.0	55.6	26.7				
1955	.459	1,322	350	732	1,255	2,215	3,454	3.7	8.0	13.9	25.5	48.9	18.3				
1956	.462	1,616	437	834	1,652	2,596	4,329	3.0	8.3	13.8	26.2	48.7	17.6				
1957	.453	1,559	482	833	1,438	2,641	4,183	3.1	9.2	13.0	26.0	48.6	16.4				
1958	.472	1,603	430	842	1,436	2,714	4,336	3.0	8.2	13.1	25.6	50.0	18.4				
1959	.480	1,637	435	837	1,500	2,688	4,696	3.0	8.1	12.9	24.8	51.2	19.1				
1960	.490	1,798	507	855	1,467	2,974	5,320	2.9	8.1	11.6	24.5	52.8	18.8				
1961	.503	1,875	468	890	1,490	3,156	5,665	2.6	7.5	11.9	24.0	54.0	21.2				
1962	.479	1,886	570	976	1,563	2,870	5,676	3.5	7.8	13.5	22.1	53.1	21.6				
1963	.499	1,979	468	973	1,714	3,183	5,712	2.5	7.1	13.4	23.8	53.2	20.9				
1964	.485	2,205	540	1,128	2,026	3,729	6,567	2.6	7.7	13.2	24.9	51.6	17.9				
1965	.471	2,406	635	1,275	2,205	4,163	6,677	2.6	8.0	13.9	25.4	50.1	17.3				
1966	.472	2,500	673	1,316	2,339	4,149	6,981	2.7	8.1	14.0	25.0	50.3	17.9				

SOURCE: See Table E.

TABLE G. PERCENTAGE DISTRIBUTION OF ALL FAMILIES AND OF LOWEST FIFTH OF FAMILIES RANKED BY SIZE OF MONEY INCOME BY SELECTED CHARACTERISTICS, SELECTED YEARS, 1947-1966

Characteristics	All Families				Lowest Fifth Ranked by Size of Money Income				Per Cent of All Families in Lowest Fifth			
	1947	1957	1964	1966	1947	1957	1964	1966	1947	1957	1964	1966
<i>Number (in thousands)</i>	37,237	43,696	47,835	48,922	7,447	8,739	9,567	9,784	—	—	—	—
<i>Color of head</i>												
<i>Total per cent</i>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	20.0	20.0	20.0	20.0
White	91.2	90.5	90.0	90.0	78.5	78.1	78.9	79.4	17.2	17.3	17.5	17.6
Nonwhite	8.8	9.5	10.0	10.0	21.5	21.9	21.1	20.6	48.9	46.1	42.2	41.2
<i>Region</i>												
<i>Total per cent</i>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	20.0	20.0	20.0	20.0
Northeast		26.2	25.2	24.6		16.8	17.7	18.9		12.8	14.0	15.4
North Central		28.8	28.1	27.8		25.0	25.1	23.4		17.4	17.9	16.8
South	n.a.	30.4	30.4	30.6	n.a.	47.9	44.0	43.9	n.a.	31.5	28.9	28.7
West		14.6	16.3	17.0		10.3	13.2	13.8		14.1	16.2	16.2
<i>Region and color</i>												
<i>Total per cent</i>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	20.0	20.0	20.0	20.0
Northeast												
White		24.7	23.4	22.9		14.6	15.3	16.3		11.8	13.1	14.2
Nonwhite		1.5	1.8	1.7		2.2	2.4	2.6		29.3	26.7	30.1
North Central												
White		26.8	26.2	25.7		22.1	22.2	20.4		16.5	16.9	15.9
Nonwhite		2.0	1.9	2.1		2.9	2.9	3.0		29.0	30.5	28.6
South	n.a.				n.a.				n.a.			
White		25.3	25.4	25.8		32.4	29.7	30.8		25.6	23.4	23.9
Nonwhite		5.1	5.0	4.8		15.5	14.3	13.1		60.8	57.2	54.6
West												
White		13.7	15.0	15.5		9.0	11.7	11.9		13.1	15.6	15.3
Nonwhite		0.9	1.3	1.4		1.3	1.5	1.9		28.9	23.1	27.2

TABLE G (cont.)

Characteristics	All Families				Lowest Fifth Ranked by Size of Money Income				Per Cent of All Families in Lowest Fifth			
	1947	1957	1964	1966	1947	1957	1964	1966	1947	1957	1964	1966
Age of head												
Total per cent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	20.0	20.0	20.0	20.0
14 to 24	5.0	5.2	6.1	6.2	6.5	6.2	8.7	8.7	26.0	23.8	28.5	28.1
25 to 34	22.8	22.1	19.4	19.5	17.4	12.9	13.7	13.1	15.3	11.7	14.1	13.4
35 to 44	24.0	24.1	23.3	22.7	17.5	14.6	14.0	12.6	14.6	12.1	12.0	11.1
45 to 54	20.7	21.2	21.6	21.7	15.9	17.5	13.8	13.6	15.4	16.5	12.8	12.5
55 to 64	16.0	14.5	15.6	15.7	16.6	16.4	15.9	14.9	20.8	22.6	20.4	19.0
65 and over	11.5	12.9	14.0	14.2	26.2	32.3	34.0	37.0	45.6	50.1	48.6	52.1
Type of family												
Total per cent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	20.0	20.0	20.0	20.0
Male head	90.1	90.6	89.8	89.4	81.8	78.2	75.6	74.7	18.2	17.3	16.8	16.7
Married, wife present	86.8	88.0	87.3	86.9	77.5	74.4	72.0	71.3	17.9	16.9	16.5	16.4
Wife in paid labor force	n.a.	24.7	28.7	30.7	n.a.	11.9	11.8	12.5	n.a.	9.6	8.2	8.1
Wife not in paid labor force	n.a.	63.3	58.6	56.3	n.a.	62.5	60.2	58.8	n.a.	19.7	20.5	20.9
Other marital status	3.3	2.6	2.5	2.4	4.3	3.8	3.6	3.4	26.1	29.2	28.8	28.4
Female head	10.0	9.4	10.2	10.6	18.2	21.9	24.4	25.3	36.4	46.5	47.8	47.7

SOURCE: Data for 1947, 1957, 1964 from Henson, Mary F., "Trends in the Income of Families and Persons in the United States, 1947-64," Technical Paper No. 17, U.S. Bureau of the Census, Tables A and C; data for 1966 from unpublished data provided by U.S. Bureau of the Census.

TABLE H. THE POOR AND NEAR POOR: NUMBER AND PERCENTAGE OF PERSONS IN HOUSEHOLDS BELOW SOCIAL SECURITY ADMINISTRATION POVERTY LEVEL AND BELOW LOW-INCOME LEVEL, BY FAMILY STATUS AND COLOR OF HEAD, 1959, 1964, AND 1966

Family Status and Color of Head	1959						1966					
	Poor			Poor and Near-Poor			Poor			Poor and Near-Poor		
	Total	Num- ber	Per Cent	Num- ber	Per Cent	Total	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
<i>All persons</i>	176,479	38,940	22.1	54,746	31.0	193,415	29,657	15.3	44,807	23.2		
<i>In families</i>	165,777	33,864	20.4	49,124	29.6	181,048	24,836	13.7	39,205	21.7		
<i>Head</i>	45,062	8,281	18.4	12,040	26.7	48,922	6,086	12.4	9,640	19.7		
<i>Male</i>	40,559	6,352	15.7	9,741	24.0	43,750	4,276	9.8	7,337	16.8		
<i>Female</i>	4,503	1,929	42.8	2,299	51.1	5,171	1,810	35.0	2,302	44.5		
<i>Children under age 18</i>	63,745	16,637	26.1	22,604	35.5	69,771	12,539	18.0	19,176	27.5		
<i>Other family members</i>	56,970	8,946	15.7	14,480	25.4	62,355	6,211	10.0	10,389	16.7		
<i>Unrelated individuals</i>	10,702	5,076	47.4	5,622	52.5	12,367	4,821	39.0	5,602	45.3		
<i>Under age 65</i>	7,068	2,603	36.8	2,929	41.4	7,489	2,124	28.4	2,436	32.5		
<i>Men</i>	3,145	924	29.4	1,065	33.9	3,279	712	21.7	858	26.2		
<i>Women</i>	3,923	1,679	42.8	1,864	47.5	4,210	1,412	33.5	1,578	37.5		
<i>Aged 65 and over</i>	3,631	2,473	68.1	2,693	74.2	4,878	2,697	55.3	3,166	64.9		
<i>Men</i>	1,070	641	59.9	731	68.3	1,285	565	44.0	700	54.5		
<i>Women</i>	2,561	1,832	71.5	1,962	76.6	3,593	2,132	59.3	2,466	68.6		

(numbers in thousands)

TABLE H (cont.)

Family Status and Color of Head	1959				1966			
	Poor		Poor and Near-Poor		Poor		Poor and Near-Poor	
	Total	Num- ber	Per Cent	Num- ber	Num- ber	Per Cent	Num- ber	Per Cent
(numbers in thousands)								
White persons	156,869	28,231	18.0	41,917	20,313	11.9	32,591	19.1
In families	147,714	24,072	16.3	37,290	16,287	10.2	27,888	17.5
Head	40,828	6,183	15.1	9,483	4,375	9.9	7,343	16.7
Male	37,277	4,932	13.2	7,933	3,264	8.2	5,850	14.6
Female	3,544	1,251	35.3	1,550	1,111	27.7	1,493	37.2
Children under age 18	55,017	11,067	20.1	17,154	7,526	12.6	12,748	21.4
Other family members	51,869	6,822	13.1	10,653	4,386	7.8	7,797	13.9
Unrelated individuals	9,155	4,159	45.4	4,627	4,026	37.3	4,703	43.6
Under age 65	5,810	1,913	32.9	2,166	1,626	25.8	1,867	29.7
Men	2,481	611	24.6	716	540	20.1	650	24.2
Women	3,329	1,302	39.1	1,450	1,086	30.1	1,217	33.7
Aged 65 and over	3,344	2,246	67.2	2,461	2,400	53.5	2,836	63.2
Men	943	550	58.3	637	467	41.3	581	51.3
Women	2,401	1,696	70.6	1,824	1,933	57.6	2,255	67.2

TABLE H (cont.)

Family Status and Color of Head	1959				1966			
	Poor		Poor and Near-Poor		Poor		Poor and Near-Poor	
	Total	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber
(numbers in thousands)								
Nonwhite persons	19,610	10,709	54.6	12,829	65.4	23,034	9,345	40.6
In families	18,063	9,792	54.2	11,834	65.5	21,450	8,549	39.9
Head	4,234	2,098	49.6	2,557	60.4	4,905	1,711	34.9
Male	3,285	1,420	43.2	1,808	55.0	3,744	1,012	27.0
Female	949	678	71.4	749	78.9	1,161	699	60.2
Children under age 18	8,728	5,570	63.8	6,577	75.4	10,193	5,014	49.2
Other family members	5,101	2,124	41.7	2,700	52.9	6,352	1,824	28.7
Unrelated individuals	1,547	917	59.3	995	64.3	1,584	796	50.3
Under age 65	1,258	690	54.8	763	60.7	1,196	499	41.7
Men	664	313	47.1	349	52.6	592	172	29.1
Women	594	377	63.5	414	69.7	604	327	54.1
Aged 65 and over	288	227	78.8	232	80.6	388	297	76.5
Men	128	91	71.1	94	73.4	152	98	64.5
Women	160	136	85.0	138	86.3	236	199	84.3
								211
								89.4

SOURCE: Derived by the Social Security Administration from special tabulations by the U.S. Bureau of the Census from the Current Population Surveys for March, 1960 and 1967.

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