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CHAPTER 27

THE PROBLEM

What is the frequency distribution of annual income among personal income recipients in the United States? Before we can give an intelligent answer to this question, we must formulate it more definitely by indicating certain connotations which logic or expediency leads us to attach to some of its terms.

By *income* it seems desirable to mean actual money income, plus the estimated money value of the more important of those items of commodity or service income on which a money value is ordinarily placed. Two of the most important items which are thus included are the annual rental values of owned homes and the value of farm produce consumed by farmers' families.

In line with the ordinary convention, we have excluded from our definition of *income*, that income, whether monetary or non-monetary, which a wife receives from her husband or a child from its parents.¹ Not only is such exclusion practically expedient but it is also theoretically defensible and that quite apart from the fact that a money value is not ordinarily placed on the services of wife or child, wages of housekeepers to the contrary notwithstanding.

The frequency distribution resulting from the exclusion of such quasi incomes will be less heterogeneous and more significant and interpretable than the distribution which would result from inclusion. For the relation of the incomes of wives and children to the economic struggle is derived and secondary, while that of most other incomes is direct and primary. Now, though the distribution of income among persons is not synonymous with distribution among the factors of production, the two problems are very closely related. An individual's income may be thought of as made up of wages, rent, interest and dividends, profits, and gifts or allowances. If we omit this last type of income, the problem of factorial distribution proposes an investigation of how and why the individual received what remains. Even if gifts and allowances admitted of any such systematic and reasoned explanation as may be given of rent, wages, etc., the explanation would be of a totally different kind. Hence, for the purposes of this investigation, it seems undesirable to classify as *income*, the receipts,

¹ That is, while such income has, of course, been counted in the first instance as income of the husband or parent it has not been re-counted as income of the wife or child.

whether monetary or non-monetary, of those persons receiving merely allowances or gifts.¹

Similar considerations have led us to think of an *income recipient* as an individual rather than a family. Just as it is the husband and not the wife, the parent and not the child, so it is the individual and not the family who, as an income receiver, comes into direct economic relationship with the machinery of distribution.

The chief argument in favor of family rather than individual treatment of the frequency distribution is based upon the idea that, though income accrues to the individual and not the family, the family is a more significant unit of economic need than the individual. But this is a different approach to the question and has, of course, no intimate relation to the problem of factorial distribution. Moreover, we must remember that if we are going to improve appreciably upon the individual, even as a need unit, we cannot stop with actual biological families with their great variation in size and constitution, but must introduce the concept of the theoretical family—father, mother and three children, for example. This last concept is, in its raw form, quite unusable. The population is not made up of such theoretical families. We may discuss what a family of five *ought* to get to maintain a decent standard of living, but we cannot divide the actual population into families of five and discuss what these non-existent hypothetical families actually do get. There remains the alternative of expressing actual families in terms of some *need* unit such as the "ammain."² While this last procedure would probably yield an extremely interesting distribution based upon *need* units, it is impractical to attempt any such solution with the data available.³

Though a distribution of income among actual biological families would appear to be somewhat less enlightening and interpretable than a distribution by individuals or by ammins, it would have its own peculiar interest and we would have attempted its construction had the data been adequate for such a purpose. Most of the data bearing on income distribution are in the individual form; wages distributions, for example, are

¹ Of course if the wife or child has "independent" income, that income is no longer of the nature of a gift or allowance even though it may arise from property originally deeded by the husband or father. It is now explainable in terms of rent, interest, etc.

If *income* be defined as above, the term *personal income recipient* will correspond closely to the census expression *person gainfully employed*. Perhaps the most important difference is that we do not and the Census does include as separate income recipients, farm laborers working on the home farm.

² *Ammain* is a word coined by W. I. King and E. Sydenstricker and defined by them, for any given class of people, as "a gross demand for articles of consumption having a total money value equal to that demanded by the average male in that class at the age when his total requirements for expense of maintenance reach a maximum." *Measurement of Relative Economic Status of Families*. Quarterly Publications of the American Statistical Association, Sept., 1921, p. 852.

³ It is of course quite possible to estimate the *average* per ammain income, as has been done by Mr. King; the total income of the people can be divided by the estimated number of ammins in the population. See pages 233 and 234.

almost without exception in that form. Now to estimate the frequency distribution of income among families from data which, in the first place, are in the individual form and, in the second place, are extremely inadequate for estimating even the distribution among individuals, could only increase the degree of uncertainty in our results.

A few words explaining the reason for introducing the next chapter at this point are not out of place here. The data upon which an estimate of even the *individual* distribution of income in the United States must be based impress one as being in such shape that it is impossible to arrive at more than the roughest sort of approximation by any mere direct adding process. Some more ingenious plan would seem almost necessary. For example, would it not be possible to formulate a general mathematical "law" for the distribution of incomes which law might then be used for "adjusting" the tentative and hypothetical results obtained from piecing together the existing scanty and inadequate material?

The possibility and desirability of mathematically describing the frequency distribution of income would seem intimately tied up with the case for mathematically describing error distributions and statistical distributions in general. The fact that, in our problem, the "law" would be largely derived from the same data as those which were to be "adjusted" need not greatly disturb us. The procedure of adjusting observations in the light of a mathematical expression derived from the same observations is not novel. A number of attempts, one of which has become world-famous, have been made to demonstrate that the distribution of income follows a definite mathematical law. However, the next chapter will show why we fear that no rational and useful mathematical law will soon be formulated.