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MEASUREMENT IN SOCIAL STRATIFICATION

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INTRODUCTION

Valid measurement involves a process of theoretical conceptualization and operational definition based on rules of correspondence between the theory and the scaling techniques selected. The requirement of prior conceptual clarity is a major obstacle in the measurement of social stratification: theories in this field are complex, contradictory, diverse, and "as difficult to express operationally as they are grand" (Jackson & Curtis 1968:112). It is not the purpose of this paper to review the theoretical issues; that has been well done by others in recent years (Svalastoga 1964, 1965; Bottomore 1966; Lenski 1966; Tumin 1967; Allardt 1968; Runciman 1968; Parsons 1970; Eisenstadt 1971). Rather, the major objective is to present and critically review some of the measurement devices that have been developed by US, Canadian, and British researchers. Fortunately, there are some core concepts in social stratification that have permitted these attempts at measurement, even in the absence of an agreed-upon theoretical base, or as Bottomore suggests (1966:10), "some general features of social stratification which are not in dispute."

In the first place, social stratification is virtually synonymous with social inequality.[1] Strata are not simply nominal categories, but hierarchically arranged sets with distinctions by ordinal rank. These distinctions indicate a second general feature, namely that stratification is social, the ranks based on societal definitions or attributions of differential value. The arenas and grounds for these value judgments, however, are subject to some controversy. There is little disagreement concerning the existence of at least two types of characteristics generating such judgments: biological distinctions, such as age, sex, or race, and acquired distinctions, such as power, wealth, or prestige. But there is no theoretical consensus as to which of these

[1]In this respect stratification of a society must be distinguished from differentiation of its roles and positions. Differentiation implies only greater diversity, whereas stratification implies a ranking of these elements.

characteristics, particularly among the acquired, should be the basis of a general theory of stratification of the society, although there is no doubt that a great many such characteristics are subject to socially developed hierarchies of worth. Women are less than men on some value scales, blacks less than white, teenagers less than adults, poor less than rich, manual labor less than nonmanual, and so on. Moreover, all these distinctions are invidious; not intrinsic to the category, but extrinsic, located in the eye of the beholder.

Theoretical issues on which there are considerable differences involve whether such invidious distinctions between strata are universal in time and space, having always existed in the past everywhere, and thus appropriately projected into the indefinite future everywhere. Also unresolved is whether the distinctions are functional for societal integration and maintenance, and operate through value consensus (Davis & Moore 1945), or on the contrary, the result of group conflict in which one category or another achieved dominance over the rest (Dahrendorf 1959). Neither of these issues is directly relevant to the measurement problem, since this paper cannot address either the process of social stratification or its history.

Another matter on which there has been some dissensus is whether social stratification indeed involves strata, that is, groups or sets of individuals or roles with commonly evaluated characteristics, or whether it is a continuous variable. This controversy arises with respect to debate on the existence of socioeconomic classes (Landecker 1960). It is less likely to occur when stratification is by such discrete criteria as race or sex. In any event, even if one accepts the notion of stratification as a continuous variable, for purposes of analysis it is necessary to group and categorize the elements into distinct, mutually exclusive sets at some level. Settlement of this dispute is not a prior condition for the development of a valid system of measurement, although any system developed must establish criteria for grouping.

Despite the variety of dimensions on which a society may be crosscut, social stratification is a term commonly applied to the socioeconomic realm, largely because of the legacies of Marx and Weber. Class categories, according to Marx, are based on a group's relationship to the means of production, resulting in a structural division, at the broadest level, between capital and labor. More widely accepted as a basis for stratification is the Weberian view of differential societal position based on three arenas: class, status, and power, with class having an economic referent, status alluding to prestige or standing in the community, and power related to a political context (Jackson 1968:1). Consistent with both perspectives is the stance that a social class system is rooted in unequal access to and possession of goods and services, with status and power variations as both causes and consequences of this inequality (Lenski 1966).

Runciman, in evaluating the three dimensions of class, status, and power, emphasizes this conceptual link between the three, as well as their high intercorrelations. While maintaining that each is a distinct aspect of social ranking, not fully interchangeable with any other, he argues that a three-dimensional framework for assigning social position is "unnecessary, simply because of the closeness of fit between the three dimensions alike in industrial and pre-industrial societies" (1968:54).

Runciman concludes that occupation is reliable as a single indicator of a person's relative standing on all three dimensions, particularly in industrial societies. This viewpoint is shared by many researchers, as evidenced by the frequency with which occupation is used to operationalize stratification. Blau & Duncan, for example, consider the occupational hierarchy to be "the underlying dimension" of stratification (1967:7) Both theory and current practice argue for the selection of occupation as the most feasible single indicator of relative position in a multiple social stratification system.

Selection of an indicator by no means solves the measurement problem, however. A crucial and difficult issue remains: how are occupations to be evaluated for the purpose of ranking them in a hierarchical order, and by what criteria? Much of the discussion below details the different methods that have been used to accomplish this task. Criteria for ranking fall into two major categories. One type relies essentially upon concurrent validity. Since education and income are conceptualized as validly allocating persons to differential life-styles and power positions, and occupations are considered highly related to variations in schooling and earning, occupations are ranked on the basis of their presumed educational requirements and monetary payoffs. This approach is said to provide a socioeconomic index, and indeed categorizes in economic, or in the Weberian sense, "class" terms. Another type of criterion relies more directly on the fact that stratification is a socially determined phenomenon. Accordingly, public estimates of the social standing or prestige of occupations, used to produce an index in the status dimension, have a certain face validity. Respondents do not focus on income or education to explain their occupational prestige allocations (Reiss 1961:34), a finding that tends to support a distinction between class and status. However, as Goldthorpe & Hope have argued (1974:11), publics do not specifically think in prestige terms either, in the sense of esteem or honor, but rather assess occupations by their images of a variety of attributes, in terms of some "unspecific 'better-worse' dimension (or) general desirability." Just what public estimates of occupational standing actually do measure is thus somewhat problematic.

It is noteworthy that income, although partially dependent on occupational role, is not appropriate as a single indicator of class position, because in fact income varies widely within occupations and is not monotonically related to either status or power. The high standing of college professors is obviously not produced by high income, and physicians, despite publicity on a few exceptions, do not do as well as some business executives. Moreover, some categories of blue-collar workers earn considerably more than white-collar workers, the well-publicized claim that New York street sweepers take home $17,000 a year, or more than most school teachers, being a case in point.[2] Indeed, income levels vary with idiosyncratic circumstances, such as having a common-labor job in an Alaskan oil field, belonging to a powerful union, or even having the luck of being the only heir to a grandfather who bought natural gas stocks.

[2]This is a striking example of status discrepancy, an area of study beyond the scope of this paper, but pursued by a number of researchers, most notably Lenski (1966).

The distinction has frequently been made between "objective" and "subjective" measures of social position. The subjective method refers to a study respondent placing himself or herself in a social stratum or class (e.g. Centers 1948), while the objective method requires only that a respondent give his or her occupation, which is then allocated to a stratum by a researcher. This distinction loses its force when one considers that at root both methods are subjective. Self-placement undoubtedly involves the individual's image of his/her occupation's place in the social order as at least one part of a global estimate. Self-report of one's occupation is but one step removed. The researcher who now places the respondent in a stratum or class does so by comparing the reported occupation with some systematic ordering of occupations, relying thereby on criteria of allocation derived from some earlier subjective evaluation as to the proper place of each occupation in the social order. Any prestige-based scheme, for example, represents an aggregate public image of the appropriate hierarchical arrangement of the division of labor. Such social definitions of relative worth are no less "subjective" simply because they combine many individual perceptions of the way occupations are rank-ordered.

Focus on the social component of stratification underscores the fact that using occupation as an indicator does not imply some immutable position in the economy, but relative position based on human judgment, which may apply to status honor, fair wage, appropriate level of training, or vague general desirability of work role. Such judgment, however currently similar in industrialized societies, is accordingly subject to change.

In the sections that follow, various ways of operationalizing the concept of stratification by way of assigning a hierarchy of values to occupations are presented. Thus all are subjective in the sense just discussed. However, some involve prestige evaluations and are in the status domain, while others utilize criteria such as estimates of occupational education requirements and income rewards, and are more congruent with the class domain. The latter are sometimes called socioeconomic and distinguished from prestige-based measures, although as is shown below, there is considerable overlap between the two techniques.

Major attention is given to scales currently in use in the United States and Canada, but developments in Great Britain are included, as well as a brief review of occupational ranking in eastern Europe and the USSR, and some special problems of measurement with respect to the roles of women and blacks. A newly created Standard International Scale is also presented.

MEASUREMENT OF OCCUPATION—THE UNITED STATES CENSUS

There are two systems of classifying occupations used by the United States government, one in the Department of Labor, and the other in the Bureau of the Census of the Department of Commerce. The Labor Department issues the Dictionary of Occupational Titles, containing about 22,000 separate occupations with over 35,000 titles. These are grouped in nine major categories, in turn subdivided by type of activity, i.e. the extent to which the work involves dealing with data, people, and

things, ranging from not at all to the most complex functional relationship. The result is a six-digit code for each title. Occupations are then regrouped according to 114 required worker traits, which are subdivided into 22 broad areas of work (U.S. Department of Labor 1: xvi–xix). The complexity of the system perhaps accounts for the fact that this author knows of no instance where it has been used as a basis for a stratification measure. Census categories, on the other hand, have been widely employed for this purpose.

Alba Edwards developed the scale that underlies the major current categories (Edwards 1938). Using data on education and income as criteria, he collected all occupations into ten ordered classes. These are socioeconomic groups in which education was conceptualized as conveying social status, and income as conveying economic status on occupations and their incumbents. "Each . . . represents a large population group with a somewhat distinct standard of life, economically, and to a certain extent, intellectually and socially," (Edwards 1943:179), in "descending order of the social-economic status of the workers comprising them," (Edwards 1943:182). In a sense, then, Edward's scale reflected the skill and knowledge requirements for a type of work as well as the monetary rewards accruing to those performing it. The six major resulting categories and their subclasses produced a ten-step scale, from professional to "servant classes" (See Table 1). Changes have occurred in succeeding decennial censuses. The 1970 major classifications, also given in Table 1, reveal that all farm work has been shifted to near the bottom of the array, the managerial category has been retitled, sales workers have been distinguished from clerical workers, blue-collar categories have been retitled and expanded, service workers have been added, and "servant classes" have become "private household workers."

Over 400 separate occupational categories, each with an identifying 3-digit number, are subsumed in the resulting twelve levels. In turn, about 23,000 particular job titles, sometimes differentiated by industry, are fitted into these categories. The US Bureau of the Census Index of Occupations and Industries (1971) permits a researcher to look up, for example, green-chain puller and find that this job is assigned to Freight and Material Handlers, which in turn belongs in Level 8, Laborers, except Farm. For the practical purposes of any investigation in which occupation is used as an indicator of class or status, this feature is an invaluable aid.

Whether the twelve current major classifications maintain the socioeconomic groupings mentioned by Edwards is open to question, but the revisions do retain the basic dichotomy between white-collar and blue-collar, or nonmanual and manual occupations, the break occurring just above the craftsman category.

In some studies, this dichotomy is conceptualized as differentiating the middle class from the working class, and becomes the measurement of choice. Farm occupations cause difficulties, however, since they do not fit easily into either part of the split. The solution has been to omit farm work altogether, or to trichotomize, maintaining all farm work as a separate category. This measurement system, for instance, was employed by Middleton (1976).

Other ways of regrouping the major census categories are not uncommon. Thus a four-level hierarchy was used by Mueller & Johnson (1975): unskilled and semi-

Table 1 US Census Occupational Categories, 1940 and 1970

1940[a]	1970[b]
Professional	Professional, technical, and kindred workers
Proprietors, managers and officials	Managers and administrators, except farm
farmers (owners and tenants)	Sales workers
wholesale and retail dealers	Clerical and kindred workers
other proprietors, managers, and officials	Craftsmen and kindred workers
Clerks and kindred workers	Operators, except transport
Skilled workers and foremen	Transport equipment operators
Semiskilled workers	Laborers, except farm
Unskilled workers	Farmers and farm managers
farm laborers	Farm laborers and farm foremen
laborers, except farm	Service workers, except private household
servant classes	Private household workers

[a] From Edwards 1943.
[b] From US Census 1971.

skilled; skilled; clerical and sales; professional and managerial. Others have used five categories, separating unskilled and semiskilled (Erbe 1975). Some have expanded the array to 12 levels, differentiating self-employed from salaried within the professional and managerial categories, but combining service and private household (Hauser et al 1975:40–45).

It is apparent that the original rationale for the occupational hierarchy has been diluted over time. Educational requirements and income rewards hardly distinguish the major categories on a mutually exclusive basis. Between 1960 and 1970, the order of sales and clerical workers was reversed, which seems difficult to justify theoretically or empirically. Moreover, one of the most critical shortcomings of the census scheme as a measure of occupational position and thus of social stratification is the wide variation within categories. While within-stratum heterogeneity is to be expected in the broad twelve-group scheme, it occurs also in the subcategories, particularly those residuals labeled "n.e.c." (not elsewhere classified). Thus in the 1970 Census, more than 10% of the males in the category "all other professional, technical and kindred workers," who had worked 50–52 weeks in the year earned less than $6000 in 1969, while over 25% earned more than $15,000. About 10% had not completed high school, compared to nearly 30% with 5 years of higher education or more (US Bureau of the Census 1973:52). Similar wide variations can be found in many other classifications: even 2% of farm laborers were listed as earning more than $15,000 per year. A measure of stratification with so much intracategory variability is also bound to have intercategory overlap in these characteristics, calling its validity into serious question. Obviously, when categories are

grouped into fewer strata, as in a dichotomy, the resulting heterogeneity and overlap are even more confounding.[3]

Nam, during his tenure at the Census Bureau, developed a Socio-Economic Status (SES) scheme that employs occupation as one indicator in a composite index of social position. These SES scores (US Bureau of the Census 1963), are calculated for the chief income recipients in families, usually the male, and consist of a simple average of that individual's occupation, education, and family-income scores, which are then assigned to the entire family. Education and income score values are set on the basis of the main earner's location in the cumulative percentage distribution of all family main earners in 1959.

The occupational dimension is calculated differently. Using the 1960 Census data for all males 14 years or over in the civilian labor force, the occupations were arrayed according to the median educational level of each, and the number of persons in each was calculated. A separate array for median income and numbers of accompanying occupational incumbents was also prepared. For any occupation, the midpoints of the cumulative interval of persons in each array were averaged and divided by the total civilian labor force. "The resulting scores can take values between 0 and 100 and a score indicates the approximate percentage of males in the experienced civilian labor force who are in occupations having combined average levels of education and income below that for the given occupation" (Nam & Powers 1968:159–60), and is thus roughly equivalent to an occupation's averaged percentile rank in a status array. This system reorders occupations without regard to the twelve major census levels, but perforce still suffers from problems of within-category heterogeneity at the level of the 400-plus separate occupational groups. It does enjoy concurrent validity with respect to its relationship with occupation skill requirements and rewards as operationalized by relative education and income. On the other hand, attempts to group in fewer strata, such as by the first digit of the score, or by returning to the twelve major census categories, (Nam & Powers 1965, 1968) have not been validated and are without theoretical rationale. A recent example of the sociological use of the composite scale can be found in Chiricos & Waldo (1975). Significantly, the occupational scores correlate highly (0.97) with a prestige-anchored scheme, the Duncan SEI (Nam & Powers 1968:160).

US MEASURES OF OCCUPATIONAL POSITION: HOLLINGSHEAD[4]

The Hollingshead Index of Social Position (ISP) also employs occupation as one indicator in a composite index. It is a simplified version of a measurement device developed from earlier work by Hollingshead & Redlich (1958). The ISP combines

[3]For a further discussion of difficulties in census classifications, see Hodge & Siegel 1966. Note that some 1970 census publications list 417 major categories, while others list 441.

[4]Portions of this and the next section are adapted from an earlier work of this author (Haug 1972).

two sets of ranks treated as scores, each with a 1 (high) to 7 (low) range, one for occupation, (weighted by a factor of 7) and one for education (weighted by a factor of 4). The resultant values, ranging from 11 to 77, are then unevenly divided into five classes, with the highest (Class I) having a spread from 11 to 17 and the lowest (Class V) from 61 to 77. Hollingshead does not justify this system except to state that these are "the most meaningful breaks for the purposes of predicting the social class position of an individual" (1957:10), although elsewhere he validates an ISP containing a third factor, residence, on mass communication behavior (Hollingshead & Redlich 1958).

The educational levels range from graduate professional training to less than seven years of schooling. The rationale for the breakdown is not given, although the implication is that the basis is similarity in tastes, attitudes, and behavior patterns (Hollingshead 1957:9).

The seven occupational levels with their attendant titles give the flavor of the work-role hierarchy:

1. Higher executives, proprietors of large concerns, and major professionals.
2. Business managers, proprietors of medium-sized businesses, and lesser professionals.
3. Administrative personnel, small independent businesses, and lesser professionals.
4. Clerical and sales workers, technicians, and owners of little businesses.
5. Skilled manual employees.
6. Machine operators and semiskilled employees.
7. Unskilled employees.

Lists of specific occupations fitted under each level are given. On its face, the scheme resembles the major US Census categories; however, examination of the detailed occupations in each level reveals that, unlike the Census, proprietors, managers, and farmers are differentiated according to the product and capital of their enterprise. The bases for allocating a specific job title are the necessary skills; the different values attached to the manipulation of things, people, and ideas, as well as the "cleanness or dirtyness" of the work; the size of the industry; and the span of decision-making authority on the job (Hollingshead 1957:2–8).[5] The system of allocation appears consistent in terms of occupational roles in the economy and does not depend on prestige or status judgments as a basis for ordering.

Unfortunately, the practical usefulness of this scale is limited by the relatively narrow scope of the detailed occupational lists. Persons using the Census levels, or the Census-based SES, can refer to the US Bureau of the Census (1971) to determine how over 15,000 job titles can be allocated to 441 categories, each with a unique Census code and SES score, and thus to the major levels under which the categories are subsumed. On the other hand, although Hollingshead lists over 300 job titles and about 100 different types by size and product with their appropriate score

[5]The grounds for differential evaluations specified by Caplow (1954) are apparently utilized in this classification system.

values, the roster is both outdated and incomplete. For example, quaint and rare jobs such as hostler and railroad conductor are included, but computer programmer and television technician are not. This is because the ISP was developed at first specifically for the study "Social Class and Mental Illness," and only those occupations that turned up in the sample were included (Hollingshead 1971). Furthermore, the list is not congruent with the Census categories, particularly with respect to professional and managerial jobs, where Hollingshead makes finer distinctions than does the Census, e.g. between musicians and music teachers, or editors and reporters.

Another difficulty in the practical use of ISP as a stratification measure is the confounding effect of respondent's age on his class designation due to variations in educational level by present age. The effect of the educational factor is to differentiate those at the same occupational level. A matrix of the two factors and their associated class designation illustrates the point. Major corporation executives (at occupational level 1) can be variously in social class III, II, or I, depending on whether they finished only the ninth grade, attended but did not finish college, or graduated from college. Similarly, a skilled worker, such as a toolmaker at occupational level 5, can be in class III, IV, or V, depending on his years in an educational institution. However, the nexus between formal schooling and work has been changing over time. Forty years ago, it was not uncommon for a young man to leave high school and become an apprentice business executive or lawyer. Today, educational qualifications have been largely substituted for on-the-job training, and the diploma is the ticket to the career. Under these circumstances, the use of education as a component of stratification measurement produces variation in class allocation according to the irrelevant factor of the age of the respondent.[6] This critique, of course, also applies to the Census SES use of main earner's own education as an indicator of social position.

Currently, the Hollingshead stratification index has fallen into relative disuse, although a recent example of its application can be found in Brown & Rawlinson (1976). Also, the set of seven occupational categories in the Hollingshead scheme have appeared as a way of ordering occupations in their own right (Pearlin 1975).

US MEASURES OF OCCUPATIONAL POSITION: THE DUNCAN SEI

Undoubtedly the most frequently used stratification measure in current American research is one based on occupational prestige as evaluated by public opinion, the Duncan Socio-Economic Index (SEI). The history of the SEI goes back to the North & Hatt prestige ratings for ninety occupations conducted by the National Opinion Research Center in 1947. These were based on the responses of a national NORC sample (N = 2,920) to questions about the "general standing" of the jobs, on a five-step scale ranging from excellent to poor. Transforming these into the equivalent of mean scores across the entire sample, a prestige rating for each of the ninety

[6]For an extended discussion of the use of education, see Haug (1972:436–38).

occupations was secured, with a high of 96 for Supreme Court Justice to a low of 33 for shoeshiners (Reiss 1961).

These scores have held up remarkably when replicated: there is a correlation of 0.99 between the 1947 ratings and a restudy in 1963 (Hodge et al 1964). However, Hodge and his colleagues warn that the ordering of the occupations is more reliable than actual scores (1964:288). Moreover, stereotyping appears common (Kriesberg 1962) and it occurs in the face of ignorance of the occupation (Haug & Sussman 1969). Stability of the scores across time may be because "old stereotypes never die," or, more accurately, because certain common values have persisted in industrial societies in the post–World War II years.

Since the North-Hatt Scores cover only a fraction of the 400-plus major job categories of the Census Bureau, Duncan's SEI was devised to estimate the prestige ratings for the "missing" occupations. Using the 45 North-Hatt occupations that could be matched with those job titles for which Census information on education and income was available, the following multiple-regression equation was derived: SEI score $= 0.59\,X_1 + 0.55\,X_2 - 6.0$. The criterion variable (SEI) was not the NORC North-Hatt prestige score itself, but the percentage of excellent plus good responses in the original NORC study. X_1 is the percentage of males in the occupation with incomes of $3500 per year or more, and X_2 is the percentage of males in the occupation who were high school graduates or better, as determined by the 1950 Census data corrected for differences in age distributions. The Duncan SEI is thus explicitly the estimated percentage of excellent plus good public-opinion ratings accruing to an occupation, as computed from the 1950 Census percentages of males in the work force with income and education at or above the predictor break-points.[7] This index, in utilizing occupational incumbents' education and income to determine a work role's score, appears on its face to be a socioeconomic scheme and is so titled. However, the basis for ordering the occupations is a prestige rating, or, more precisely, a mathematical surrogate for a prestige rating, which roots the entire scale in the grounds of public opinion.

The calculations for both the criterion and the predictor variables are subject to methodological criticism. Utilizing the percentage of highly favorable responses instead of the means, as in the original NORC scores, produces some inversions among the forty-five occupations used for estimation. Clergymen and chemists exchange places, as do bartenders and soda clerks. Considering that the ordering of the occupations in terms of prestige has been viewed as more meaningful than any individual score, these inversions introduce some error.

Furthermore, the face validity of prestige rankings rests on their representing a public point of view, which, while it does not require consensus to the extent of unanimity, should at least represent a clustered agreement around a modal value. Consequently, one can accept percentages of "good" and "excellent" responses as representative of community consensus on the most prestigeful occupations, but

[7]For full details on the index construction, see Reiss (1961:129ff). Notice that Duncan claims the index does not predict prestige ratings that would occur if the NORC survey were replicated for additional occupations, on the grounds that the additional occupations might be less well known to the public than the original set.

these percentages express idiosyncratic opinions with respect to jobs that are generally viewed as having low status. The 3%, 6%, and 8% of NORC respondents who rated shoeshiners, soda-fountain clerks, and janitors as having high community standing were flying in the face of majority public opinion.[8] These responses suggest various biases, perhaps militant egalitarianism, response set, fatigue, ignorance, or misplaced politeness. Yet these deviant evaluations are precisely the ones used in the SEI calculations.

As for the predictor variables, dichotomizing by percentages of those above a single breakpoint of earnings and education produces some unusual orderings. For example, the SEI calculates that the highest statuses in the United States are those of dentists and osteopaths (96), followed by lawyers and judges (93) and physicians and surgeons (92). Comparing dentists with physicians and surgeons reveals that in both occupations the 1950 census has nearly 100% completing high school, leaving earnings as the only status differentiator. But while the median income for physicians and surgeons was almost 30% above that of dentists, a larger percentage of dentists than physicians earned $3500 a year or more, undoubtedly a function of the internship and residency requirements for physicians in the 1940s, which relegated all new practitioners to several years of enforced very low earnings, a procedure not generally followed in dentistry. The result is a reversal of the status order found empirically in the original NORC survey, where physicians rank second and dentists fifteenth.

Since professions and semiprofessions, both in 1950 and now, require post–high school training, the census proportion of incumbents with a high school diploma will hardly vary from 100%, except for a few elderly who rose by an earlier apprenticeship route. For practical purposes, therefore, at the upper end of the scale, income is the sole status determinant because meaningful distinctions between partial college, complete college, and a postgraduate degree are lost. Under these conditions, also masking variations in earnings above the arbitrary breaking point of $3500 a year only compounds the problem. At the lower end of the scale, where only small percentages of occupational incumbents had achieved a high school diploma, the figures used in the SEI formula are affected by thwarted upward strivers or downward drifters, such as the 5% of bus drivers with some college education. Any job requiring commonly held skills can similarly have an artificial increase in the value of the education predictor.

This chapter alluded earlier to a 0.97 correlation between the Duncan scale and the occupation scores in the Census SES. However, data for that analysis were occupations as units. A calculation by this writer, using individual respondents as units ($N = 1248$), in a sample representative of the adult US population, produced an r of 0.75, indicating that only a little more than half of the variability in one scale could be "explained" by the other (Haug 1972:442). The difference is due to the fact

[8]The contrary ratings are not due to over-representation of self-adulatory occupational incumbents (Reiss 1961:216–17). Also irrelevant is the distinction, if any, between respondents who interpreted the stimulus question as asking their personal estimates and those who thought their estimate of general public opinion was sought. In either case, the aggregate results generalized to the views of the population as a whole.

that the input to the higher correlation was in effect "unweighted" by the number of persons in each occupation and therefore artificially high in terms of the labor force as actually distributed in work roles. A similar analysis comparing the Hollingshead occupation scores and the Duncan SEI across the same set of individual respondents produced a correlation coefficient of 0.84.[9]

Grouping occupational scores into classes is a problem that does not arise in practice whenever these scores, however derived, are treated as interval measurements and the full array fed into computers for regression and correlational analyses. Conceptually, however, it should be possible to cluster them in a meaningful way. Two methods are suggested in the text that launched the Duncan scale. One method divides the SEI scores into equal deciles in terms of US population (Reiss 1961:263–75). This rectangular distribution is not only incongruent with demographic data that show skewed curves for both education and income in this country, but produces many status anomalies, such as lumping physicians and certain factory foremen in the top decile. The only alternative method described, which uses the first digit of the SEI score to define ten strata, avoids the unrealistic rectangular form, but also produces considerable heterogeneity in the middle strata (social workers in the same class as railway mail clerks), and makes apparently meaningless distinctions at the bottom (leather operatives a level above footwear workers). Neither system of grouping is supported by a theoretical rationale, validation by comparison to an external criterion, or face validity.

Among the many examples of recent uses of the Duncan SEI are Alexander & Eckland (1975) and McClendon (1976). Both employ the full score range in analysis.

One method of combining the Duncan SEI scores into broader classes, developed by Laumann & Gutman (1966), does have some theoretical underpinning. Arguing that since associational relationships tend to go along class lines, it should be possible to define classes by identifying patterns of associational relationships, Laumann subjected 55 occupations to smallest-space analysis, employing data from a sample of 422 white males. The occupations were coded by their Duncan SEI scores, but no assumptions were made on the ordering of the occupations: scores were simply identifiers. Defining association in terms of kinship, friendship, and residence relationships, Laumann found that 17 occupational clusters emerged from the analysis, located in three dimensional space.

When the occupations falling in each cluster were analyzed by their Duncan scores, it appeared that the first principal axis or dimension is closely related to the Duncan code ordering, and is therefore identified by Laumann as a prestige factor. The other spatial dimensions were more difficult to identify and Laumann did not reach any conclusions as to their meaning. Some of the 17 groups contained quite diverse Duncan scores, for example number XVII, which included both clergyman (52) and lawyer (93), while IV combined longshoreman (11) and millwright (31). Ten of the 17 classes combined Duncan scores with different first digits, casting doubt on the construct validity of the system of setting up classes by first digit of

[9]For a discussion of the reasons for these relatively low correlations, see Haug & Sussman (1971) and Haug (1972:445).

scores on the SEI, described above. Although Laumann's groupings suggested new ways of stratifying by occupation, his scheme does not appear to have been picked up by other researchers, perhaps because of the limited number of occupations included.

Before concluding this section, a brief explanation of the system used in a landmark study of the American occupational structure by Blau & Duncan (1967) must be mentioned. For the purposes of analyzing patterns of intergenerational and intragenerational mobility, Blau & Duncan employed mainly a seventeen-step occupational ranking as follows (1967:26).

1. Self-employed professionals
2. Salaried professionals
3. Managers
4. Salesmen, other
5. Proprietors
6. Clerical
7. Salesmen, retail
8. Craftsmen, manufacturing
9. Craftsmen, other
10. Construction workers
11. Manufacturing operatives
12. Other operatives
13. Service workers
14. Laborers, manufacturing
15. Laborers, other
16. Farmers
17. Farm laborers

This order was based on arraying 1960 median income and median education by occupational group in monotonic descending values from category 1 to category 17. One income inversion was made, placing retail salesman above craftsmen and operatives, in order to preserve the boundaries of the nonmanual/manual dichotomy.

Several departures from the usual census-group sequences are noteworthy. Professionals are differentiated by private practice or organizational employment, and managers are placed above proprietors, since income and education averages validate relegation of proprietor as a current occupation to the more marginal enterprises. The three-level differentiation between two groups of salesmen is also significant, avoiding the census lumping of such diverse salespersons as manufacturer's representatives and Fuller Brush men.

Although the Blau & Duncan breakdown is clearly socioeconomic in its reliance on education and income data, it does not appear to have been widely used in other research; however, a shortened 12-level form may be found in Chase (1975).

A second categorization in Blau & Duncan combined census occupational categories into five levels: higher white-collar, including professionals and managers; lower white-collar; higher manual; lower manual; and farm. This breakdown is not unlike that quite frequently seen in the research literature, as for example the already cited Mueller & Johnson (1976).

US MEASURES OF OCCUPATIONAL POSITION: SIEGEL

In view of the shortcomings of estimated prestige scores, it is not surprising that research was undertaken to secure empirical data from a public opinion sample on

as many as possible of the entire array of major census occupational categories. Siegel, in cooperation with colleagues at NORC, completed such an effort in 1971, and although a book detailing the results has been listed in bibliographies as "forthcoming" for at least the last three years, it had still not appeared in print by the fall of 1976. The scale, however, has been employed widely by NORC, and is included in full in Ornstein (1976).

According to the information in Siegel (1971), the final prestige scores were developed from a number of sources, chiefly a card-sort task administered to a national random sample ($N = 923$) as part of a 1964 NORC research project. Respondents were asked to sort 203 occupations plus that of their family main earner into nine levels (boxes arranged in a ladder format from highest possible to lowest possible social standing). Job titles were selected to match census titles, but since less than half of the major three digit census codes were used, Siegel "selected a subset of titles which were distributed over the major occupational groups of the US Bureau of the Census roughly in proportion to the major occupational distribution of the male experienced civilian labor force in 1960" (Siegel 1971:46), a procedure that permitted direct allocation of prestige scores to occupations in which the maximum number of persons were employed.

Numerous problems were encountered; for example, the n. e. c. categories are so heterogeneous as to be nearly unusable, and title matches to census categories were in some cases considered to have questionable validity. Also, an additional set of scientific and technical titles was added in order to secure comparability with a companion NORC study, along with a few additional titles of special interest to the researchers. Ratings for an occupation's prestige were allocated by the mean of the box values into which they had been sorted, such values or scores having been set at 0, 12.5, 25.5, 37.5, . . . 100, for a total of nine levels. Thus the theoretical score range for any occupation is from a low of 0 to a high of 100.

In 1965, another NORC study secured data on 153 additional occupational titles, using precisely the same method of establishing public prestige ratings as in 1964. Finally, the data from the 1964 and 1965 studies were combined with the 1963 results alluded to in the above discussion of the Duncan SEI. This required a complex system of reducing the three study findings to a common metric, and matching the some 412 separate job titles in these studies to the 1960 census major occupational categories. The census in that year had various major category breakdowns, ranging from 297 specific occupations to 494 listings when certain industrial subgroups were included. The Siegel and NORC scores were assignable to nearly 350 separate census titles, thus becoming the most complete extant directly derived prestige scores available to researchers.

The method of grouping into broader prestige strata is by the eleven 1960 major census occupational levels (Ornstein 1976:201–6) with all the previously mentioned within-stratum heterogeneity duplicated, e.g. the professional, technical, and kindred category scores range from 37.6 for dancers and dancing teachers to 81.5 for physicians and surgeons, while the sales-worker category includes hucksters and peddlers (prestige 18.3), as well as stock and bond salesmen (50.6). Grouping by first digit of the prestige score also presents difficulties, for example, machinists (47.8)

are classed with musicians and music teachers (46.0), indicating heterogeneity in terms of combining blue-collar and white-collar trades in the same category. Recent examples of the empirical use of the Siegel scale can be found in Stolzenberg (1975) and Sampson & Rossi (1975).

CANADIAN MEASURES OF OCCUPATIONAL POSITION

The process of developing stratification measures in Canada closely parallels developments in the United States. In the early 1950s, Blishen (1958) constructed an "occupational class scale" that consisted of a combination of the standard scores derived from mean income and mean education of occupational incumbents according to Canadian census data. This is similar to the US Census SES, except that scores are based on means rather than a form of percentile rank; also, Blishen developed separate score values for males and females. In the next decade, Pineo & Porter (1967) drew upon a national Canadian sample to evaluate occupational position in a manner reminiscent of the NORC rating data later analyzed by Siegel. The nine-box ladder of social standing was used by respondents to allocate 174 occupations from NORC that were translatable into Canadian census categories. The correlation across occupations between the US and Canadian ratings was high (0.98), although in general the Canadian scores tended to be a few points above the American. Pineo & Porter's data also substantiated a complaint that the major Canadian census categories were too heterogeneous (Pineo & Porter 1967:33).

Blishen (1967) then replicated Duncan's regression procedure, using 1961 Canadian census information on 320 job titles. He shifted from his earlier use of means to percentage of males with incomes $5000 or over, and percentage of males with more than 11 years of education as predictor variables, and was able to use 88 of the Pineo-Porter ratings that were census-comparable for measurement of the criterion variable of prestige. The regression equation that resulted gave a higher weight to education (0.347) than to income (0.202), unlike the Duncan formula, which provided approximately equal weights for the two predictors. Both schemes explained just under 85% of the variance in prestige scores, however, suggesting that each was equally successful in estimating prestige. The regression weights also indicate as a corollary that whereas in the United States, education and income have a virtually equal influence on status, in Canada, education is more highly valued as an element in status than money.

In grouping occupations into broader categories, Blishen improved considerably on Duncan. Earlier, he had divided the 343 occupations of his 1958 scales into seven classes on the basis of his estimate of relative prestige position. In the 1961 scale, he suggested two methods. The first divided the 320 occupations into deciles by occupation, avoiding the unrealistic rectangular population distribution that resulted from Duncan's use of deciles by population. A second classification scheme employed the first digit of the two-digit score, which ranged from 25.4 to 76.7, but grouped all occupations with scores of 70-plus and all below 30 at the two tails, thus avoiding some of the anomalous within-class combinations found in these regions in Duncan. The resulting seven-category scheme produces a population distribution

markedly skewed, with the low-status tail having the largest proportion of labor-force incumbents. In spite of its method of construction, Blishen also calls his stratification measure a "Socio-Economic Index." A recent use of this scheme can be found in Booth & Cowell (1976), and an update of the scoring based on 1971 Canadian census materials appears in Blishen & McRoberts (1976).

BRITISH MEASURES OF OCCUPATIONAL POSITION

Moving from Canada to Great Britain, the researcher encounters a census classification system that currently allocates all occupations to six social classes and 17 socioeconomic groups (one of which is a residual category of "occupation inadequately described"). The classes, set up originally in the 1911 census at five levels, but revised in 1971 to six, aimed earlier to group occupations so that each class category is "homogeneous in relation to the criterion of social standing" (General Register Office 1966). By 1971, however, the rationale was revised to read "similar levels of occupational skill" (General Register Office 1971:xvii). The 1971 class scheme is as follows:

I. Professional, etc occupations
II. Intermediate occupations
III N. Skilled occupations (nonmanual)
III M. Skilled occupations (manual)
IV. Partly skilled occupations
V. Unskilled occupations

Validity of the original five-class system was determined by the fact that 1921 birth, infant mortality, and death rates varied monotonically from low to high between Classes I and V (Stevenson 1928). The socioeconomic groups, on the other hand, are aimed to combine people "whose social cultural and recreational standards and behavior are similar" (General Register Office 1966) or in later terms, "people with jobs of similar social and economic status" (General Register Office 1971:xvii). In either event, employers and managers are differentiated by size of establishment (employing less than 25 or 25 or more persons), professional workers by whether they are self-employed or employees, and other nonmanual workers as well as manual workers by their skill level and supervisory functions, with personal service, agricultural, and military employees in separate categories. The census also combines job titles into 27 "unit groups," a mixture of industry or situs breakdowns, e.g. I is farmers, foresters, and fishermen, XVI is painters and decorators, while XXI is clerical workers, and so on.

The allocation of types of work to class levels or socioeconomic groups depends not only on occupational title, but also on an individual's "employment status," i.e. whether self-employed with or without employees, manager, foreman, or an employee. Thus in 1966, the assignment of an occupation to a location in the stratification system attempted to take into account prestige (the five-class system), life-style (socioeconomic groups), and the level of autonomy and authority of the occupa-

tional role (employment status). By 1971, social status, economic status, and skill replaced prestige and life-styles, although the distribution of occupations to classes was relatively unchanged. The consideration of social status and power position in stratum allocation tends to reduce some of the heterogeneity found in the US census structure without, however, entirely eliminating it.

The British also created a stratification measure based on public evaluations of occupational prestige. Nearly three decades ago, Hall & Jones (1950) developed a scale covering 30 prestige categories and later expanded it to include about 650 occupations, but this was not reported in full until 1966 by Oppenheim (1966). Even then, it encompassed less than a third of the British census occupation list. Although used by several of the researchers in Glass's (1954) overview of social mobility in Britain, it is apparently considered to have relatively limited practical importance at the present time.

Recently, an attempt to develop a more comprehensive prestige scale from current empirical data has been published by Goldthorpe & Hope (1974). They argue that respondents in occupational prestige studies do not generally so much assess prestige per se, but rather evaluate, "on the basis of what they know or think they know, about a variety of more 'objective' occupational attributes—most often, perhaps, job rewards or requirements—which they see as relevant to the ordering of occupations simply in terms of some rather unspecific 'better-worse' dimension... (resulting in) a judgment which is indicative of what might be called the 'general goodness' or 'general desirability' of occupations" (Goldthorpe & Hope 1974:11–12). As corroboration of this viewpoint, the authors found in a pilot study (the Oxford Inquiry) that when one sample of respondents was asked to grade 40 occupations in terms of general standing, and another sample in terms of the four dimensions of standard of living, power and influence over others, level of necessary qualifications, and value to society, the two sets of evaluations tended to converge. Using the occupations as units of analysis, the linear combination of the four attributes explained 97% of the variance in social standing, thus lending support, in Goldthorpe & Hope's view, to the theory that occupational prestige scales "reflect a composite popular judgment of the 'general desirability' of occupations" (1974:16).

Starting with the British Census categories, which simultaneously group occupations by socioeconomic group, class, and employment status, the researchers reorganized them into 125 sets of occupations judged "as homogeneous as possible in terms of extrinsic and intrinsic material and non-material rewards" (Goldthorpe & Hope 1974:24). Representative occupational titles were then selected for each set, on the two criteria of likely public knowledge and coverage of the range of occupations in each category, producing a total list of 860 occupations in 124 categories.[10]

Each member of a sample of the public in England and Wales was asked to rank 20 standard titles and then interpolate a second set of 20 titles, randomly assigned from the representative title list. Altogether, 620 respondents made 12,400 ratings,

[10]The additional criterion of male job involvement resulted in the loss of the category of employed domestic housekeepers.

with some occupations evaluated by 10 and some by 20 respondents. Mean values per occupation were calculated, using a series of mathematical manipulations that adjusted each respondent's ratings by his/her placement of the standard titles, and transformed the aggregate results into occupational scores ranging from 5 to 95. (Goldthorpe & Hope 1974:53–55).

The authors point out a number of anomalies arising from the system. Inclusion of employment status, for example, produced discrepancies between the scale values of supervisors and employees in certain categories. Furthermore, heterogeneity within scale categories produced error in orderings, to judge by common-sense ideas. Also, the scale is usable only for stratifying males, on the basis of their occupational position. The process for actually assigning a specific work role to one of the 124 graded categories involves a complex referencing from the census listing to a code assignment scheme. However, Goldthorpe & Hope include a table of the 124 categories with their numerically most important occupations, plus their scale value to two decimals (1974:96–109).

Self-employed professionals—e.g. doctors, lawyers, and accountants—have the highest score (82.05), with senior civil servants next (79.53), well above large proprietors, who seem to be most commonly the working owners of mines (66.45), and proprietors of hotels, boarding homes, and inns (66.24). Administrators and officials, including managers in publishing and mass communications (72.19) were well above industrial and business managers—in engineering, extraction, manufacturing, and construction—(66.11). At the other end of the scale, skilled manual workers such as coal miners (35.53) were above other skilled manual workers such as locksmiths, woodworkers, or butchers (32.16), while window cleaners (30.05) outranked postal workers (28.35) and waiters (22.95). In short, the "general desirability" of at least some jobs in Britain does not readily conform to what would seem reasonable to an American observer. Finally, Goldthorpe & Hope do not attempt to group their 124 major categories into a smaller number of classes or strata. Whether this elaborate system will take hold in Britain, or whether the simpler six-class census categories will be found by researchers to be easier to use and equally valid, remains to be seen.

OTHER MEASURES OF STRATIFICATION

While it is not possible to review all the methods of measuring social stratification used in studies outside of the United States, Canada, and Britain, it may be informative to discuss briefly the method of assessing relative position in the eastern European countries, whose egalitarian ideologies would seem to deny the reality of social stratification.

In fact, the presence of strata is accepted, but the notion of hierarchy as a consequence of stratification is accepted, if at all, only as a transitory and fading phenomenon. Thus the Soviet sociologist Rutkevich (1964) differentiates the intelligentsia ("a very broad stratum consisting of persons professionally engaged in intellectual work") from white-collar personnel and both of these from manual workers, but argues that technology will erode differences between them as all come

to require education. A similar theme, the elimination of social distinctions between mental and physical labor as a result of automation, is sounded by Manevich (1962). Both authors reject any "theory of social mobility" as Rutkevich puts it, thus implicitly denying any hierarchical structure to stratification.

That social distinctions involving worth continue to exist, however, is evident in the work of a number of Soviet researchers, as summarized in Lipset & Dobson (1973). For example, Shubkin (1965) measured the prestige and attractiveness of various occupations in connection with a 1963 study of occupational choice among young people in Novosibirsk, USSR, on a scale of attractiveness ranging from a low of 1 to a high of 10.

Among a 10% sample of high-school graduates, the ratings given to jobs not requiring higher education ran from 2.24 for clerks, or 2.66 for salespeople, to 2.63 for service industry jobs, 3.75 for agriculture, 4.26 for industrial workers, and 5.28 for transport and communications workers. On the other hand, work in various fields of science that do require higher education enjoys much higher prestige, e.g. physics (7.69), mathematics (7.50), medicine (7.32) down to 5.52 for economics (Shubkin, 1965–1966:12).[11]

Undoubtedly as a function of the value systems in these countries, there is a tendency to rate teachers and manual occupations relatively high compared to their place in the occupational arrays of Western industrial societies. Sarapata & Wesolowski (1961) used a multidimensional rating method combining material rewards, job security, and social prestige, the latter defined as the respect people give to the occupation. A quota sample of 763 residents of Warsaw, Poland, were asked to evaluate 30 typical occupations.

Taking the prestige ratings separately, one finds that university professors, doctors, and teachers, in that order, were at the head of the list. In 10th place were skilled steel workers, ahead of 11th-place priests, while 13th-place machinists outranked accountants (16th), and office clerks, typists, or sales clerks (24th, 25th, and 26th), were just above cleaning women and unskilled farm laborers. Thus, as Sarapata & Wesolowski put it (1961:588), the Warsaw public does not "have a homogeneous image of relatively high prestige for *all* manual occupations: the influence of socialist ideology is not strong enough to create a favorable view of the entire working class."

A similar pattern was uncovered in Czechoslovakia (Penn 1975), where 42 occupations[12] were rated by a sample of 1400, by asking them to give the order of the three they "esteemed and honored" the most. Here, doctor, collective farmer, and scientist head the list, followed by miner, high-school teacher, and engineer in positions 4, 5, and 6. Mason (9th) and locomotive engineer (11th) are above priest (18th) and judge (19th), while at the bottom are sewage worker (23rd), cleaning woman (24th), road construction worker (25th), and secretary (26th). Again, skilled manual trades outrank several professional and white-collar occupations, and as

[11]In this study, girls find mathematics and medicine more attractive than boys do.

[12]The cited article reports on only 26 of the 42 rated occupations, so that the rank orders are relative to the 26 reported, not to the entire set of 42.

Penn points out (1975:361), the aggregate groupings in both Poland and Czechoslovakia are similar in placing professional first and skilled manual workers next, with white-collar and unskilled manual workers last. As Parkin has noted in a review of the class differences in several socialist societies, the nonmanual/manual prestige dichotomy found in capitalist countries does not appear to hold. In terms of social standing and the overall socioeconomic hierarchy, the order appears to be "(1) white collar intelligentsia (i.e., professional, managerial and administrative positions), (2) skilled manual positions, (3) lower or unqualified white collar positions, (4) unskilled manual positions" (Parkin 1971:14).

These data are congruent with the view that occupations are evaluated and allocated to strata of varying "worth" or status honor on the basis of public opinion. They also suggest that these popular evaluations, even within industrialized or industrializing societies, tend to vary by ideologies and societal value systems, despite arguments by Inkeles & Rossi (1956), Hodge et al (1966), and Featherman et al (1975) that there is a universal status ranking system cross-nationally. Indeed, a number of studies have explicitly challenged the universality of the allocation system among modern societies (Yuchtman & Fishelson 1972; Gerstl & Cohen 1964). The latter study considered as evidence of variations the fact that physicians are rated highest in Britain, Australia, the United States, and Brazil, whereas the university professor or dean receives the highest rating in France, Germany, Denmark, Poland, and Japan (Gerstl & Cohen 1964).

THE STANDARD INTERNATIONAL OCCUPATIONAL PRESTIGE SCALE

Despite these national and cultural differences, an attempt has been made to integrate all the diverse scales of prestige into one standard scheme, applicable to all countries and available for cross-cultural research and other comparative purposes. This new stratification measure developed by Treiman (1977) is a standard international occupational prestige scale, theoretically applicable to the American scene, as well as to all industrial and developing countries. Treiman collected information from prestige studies in 55 nations and coded the occupational titles used into the appropriate categories of the International Standard Classification of Occupations, revised edition (ISCO), published by the International Labor Office in 1969. ISCO was selected because of its wide use, either in its original or a modified form, by census bureaus and researchers. This scheme has 284 "unit groups" or categories, a number considered insufficient by Treiman for an adequate prestige range, so that more detailed categories were interpolated to yield a total of 509 titles, 497 in employed capacities.[13] Occupational prestige scores for all 509 titles, however, were not available from all 55 source countries. After conversion to a standard metric by a method described in detail in Treiman (1977), the occupational scores that were available were averaged across countries to produce the scale.

[13]The dozen not-employed "occupations" included "lives off stock-bond income" and "beggar."

Evidence is adduced that the standard scale has concurrent validity; in a method analogous to item analysis, the correlation between each country's scores and a version of the scale omitting that country's data produced an average correlation across the 55 countries of 0.89 (Treiman 1975). Furthermore, with the exception of a few of the least industrialized and some socialist societies, correlations between the standard scale and locally developed scales did not vary by level of industrialization, as operationalized by gross national product.[14] This is believed to substantiate the generality of the occupational-prestige hierarchy produced by Treiman's scale.

The scale has some shortcomings, as noted by the author, such as its possible lesser validity in countries with a high percentage of the labor force engaged in agriculture, and the heterogeneity of certain ISCO categories, particularly manual workers whose various skill levels are not differentiated. On the other hand, the managerial category, probably the most heterogeneous of the US Census groups, is broken down so that small proprietors and minor administrators are classified at lower ranks in a manner reminiscent of the British systems.

Moreover, Treiman's method of grouping occupations into major classes offers an example of a conceptually logical scheme (Table 2). The 497 occupations in the labor force are aggregated into 14 levels, with monotonic decreasing mean standard prestige scores, and a range from high-prestige professional and technical occupations to low-prestige production and related occupations. In an attempt to minimize within-stratum variability, all major work types except the managerial and administrative (already differentiated by ISCO) are split into at least two different levels, e.g. high-prestige professional and technical occupations ranked at the top, and low-prestige professional and technical occupations in fifth place. Treiman (1977) points out, however, that the classification scheme should not be used without sufficient data to permit prior assignment of standard scores to individual occupations, since to do otherwise would run the risk of reintroducing heterogeneity into the major categories.

A US application of the Treiman scale in the literature may be found in "Sex and the Process of Status Attainment: A Comparison of Working Men & Women" (Treiman & Terrell 1975a). A use of the Treiman scale in comparative research occurs in "The Process of Status Attainment in the United States and Great Britain" (Treiman & Terrell 1975c).

SOME SPECIAL MEASUREMENT PROBLEMS

Several of the scales discussed in these pages are explicitly based on data for males in the labor force (SES occupations, Duncan, Blishen, and Goldthorpe & Hope), or are phrased in terms suggesting to prestige raters that males are being evaluated (the original NORC Study). The result, taking Duncan's SEI as a case in point, is that occupations such as nurse, librarian, and social worker, predominantly female in composition, have been scored on the characteristics of the minority of male incumbents. Some analysts believe that this has not damaged the validity of the scale

[14]Note that the exceptions support Parkin's view (see above).

Table 2 Major occupational classes; The Standard International Classification of Occupations[a]

Occupational category	Mean prestige scores
High-prestige professional and technical	68.4
Administrative and managerial	67.1
High-prestige clerical and related occupations	50.3
High-prestige sales	49.1
Low-prestige professional and technical	48.9
High-prestige agricultural	44.3
High-prestige production and related occupations	43.6
High-prestige service	40.8
Medium-prestige production and related occupations	32.1
Low-prestige clerical and related occupations	31.6
Low-prestige sales	28.1
Low-prestige agricultural	22.3
Low-prestige service	19.7
Low-prestige production and related occupations	19.6

[a]Adapted from Treiman (1977).

(Treiman & Terrell 1975a, McClendon 1976). It has been argued that "insofar as occupational prestige and socio-economic scales scale the 'desirable' aspects of jobs and occupational roles, their values should be relatively unaffected by the characteristics of incumbents, including their gender" (Featherman & Hauser 1976:465).

Some limited evidence, on the other hand, suggests that respondents are aware of the sex typing of occupations. In a study reported by Bose (1973), jobs in which women predominate were rated lower, and "the more women holding a job, the lower its prestige" (61--62). Using a modification of the Duncan method, Bose found that income of females in an occupation contributed less to prestige scores than did the median income of men (112), while using male-based equations tended to reduce women's occupational prestige scores (119). Variations of this kind, and similar ones reported in the literature (e.g. Haug 1975, Treiman & Terrell 1975b) cast some doubt on the cross-sex validity of measurements of stratification based on male prestige, education, and income data, particularly in countries with high proportions of women in the work force, as is currently the case in the United States.

Similar detailed analysis with respect to race is not easily obtained, perhaps because sex stereotyping of occupations is more prevalent than race stereotyping, although sometimes the two factors are confounded, as in the case of domestic workers. An earlier study (Brown 1955) revealed that black respondents tended to rate jobs that were then more likely to be open to blacks, including clergyman, social worker, mortician, and garbage collector, higher than the 1947 NORC ratings. Moreover, the social structure of the black community in relating occupational roles to class does not mirror the white structure (Blackwell 1975:74).

Another special measurement problem involves the use of stratification scores, however derived, in determining the relative position of a social unit or an individ-

ual. It has been customary to allocate a family's position on the basis of the status characteristics of the male as putative head of household, and to calculate an individual's family background level on the basis of the father's characteristics for purposes of studying intergenerational mobility and other research problems. It has been shown (Haug 1973) that different conclusions can be drawn, depending on whether both parents' or only the father's social status is used as an independent variable. Furthermore, the increased participation of women in the labor force exacerbates this problem, particularly because in a significant percentage of married couples, women's occupational levels exceed those of their husbands as a function of the higher valuation given to clerical over even skilled manual work roles in this country.[15]

Several solutions to this problem have been suggested, such as averaging the statuses of the husband-wife pairs, or selecting the higher of the two to characterize the household. No standardized procedure, however, has gained currency in research, although a start has been made to set prestige scores for households as a unit (Rossi et al 1974).

As of this writing, there is no commonly accepted method for taking into account working women, either in allocating occupations to some socioeconomic or prestige hierarchy, or in evaluating the social position of a family unit.

COMMENT AND CONCLUSIONS

This review of measures of social stratification points to a number of problem areas. Given that occupations provide the best or at least the most feasible single indicator of relative standing in a societal system, the problems still remain of defining them, deciding on the most valid way to order them, and determining the most theoretically sound way to group and utilize them for research purposes.

All of the major occupational stratification schemes discussed in these pages have a common parent in government census classifications. The Census SES Scale, Duncan's system, Siegel's ratings, Hollingshead's occupational levels, as well as Blishen and Goldthorpe & Hope, rely on governmental definitions of the basic units of analysis and accompanying stratification levels to build their systems of social hierarchy. The institutionalization, codification, and naming of work roles in the division of labor has been a developmental and relatively haphazard process, resulting in some arbitrary and ad hoc occupational categories (Freidson 1976). However, these are the only raw materials the social scientist has to work with, and it is quite possible that error in measuring stratification can arise from the fuzziness of outline of these elemental structural units of social differentiation. Moreover, changes in occupational boundaries are decided outside the domain of the social scientist.

[15]As of 1960, 35% of women had jobs higher in the Census hierarchy than those of their husbands (US Department of Labor 1969;38–39). Note that this finding does not clash with the data showing that many women are upwardly mobile through marriage, since upward mobility of this type is determined by comparing the wife's father's and husband's occupational status, while within-marriage status discrepancies arise from comparisons of wife's occupational position with that of her husband.

Industry rearranges tasks as it mechanizes and automates, and new roles emerge from new technologies while old work patterns become obsolete. Since census bureaus systemize and categorize the continuous process of the changing division of labor at successive points in time, social scientists must perforce accept relatively unstable definitions of specific occupations. Census categories may be the building blocks of every stratification measure—they determine the differentiation of work roles to be evaluated—but these building blocks have a tendency to disappear, suddenly appear, or mysteriously change their shape. Confusion and stereotyping on the part of public prestige evaluators is an expected consequence.

In the framework of the Weberian dimensions of class, status, and power, researchers developing methods of ordering occupations hierarchically have selected the first two as guidelines, but have not always kept them conceptually distinct. Socioeconomic measures should define the class dimension as being in the economic realm. Nonetheless, only the US Census SES scores, the British census system, the Blau-Duncan 17-class set, and to a lesser extent the Hollingshead occupational breakdowns are socioeconomic, in that they minimize or ignore the status-prestige dimension, while taking into account education-skill requirements and income rewards as scaling criteria.

The Duncan SEI, despite its name, is a prestige-based measure, as are the scoring systems developed by Siegel, Blishen, and Goldthorpe & Hope. They thus address the status dimension of occupational ordering, and by so doing rely directly on public value systems, ideologies, and stereotypes in building their scales. Not to be overlooked, however, is Goldthorpe & Hope's view that these scales do not measure status honor or esteem in the strict meaning of prestige, but rather a diffuse "general desirability" aspect of occupational roles. On the other hand, the use of occupational "prestige" evaluation tacitly accepts a potential for change, since values are not immutable or universal, either across societies or across time.

Except for Hollingshead and the British census, none of these measures attempt to include the power dimension. To the extent that span of authority with respect to size of establishment and supervisory responsibility are specifically included in the British scheme and are mentioned among the grounds for Hollingshead's assignment of occupations to levels, this aspect of occupational power has at least been taken into account. The general neglect of the element of power is inconsistent with both the Marxian and Weberian view of social stratification. Indeed, Weber makes the point that the three dimensions of stratification are each manifestations of the distribution of power, with class a phenomenon of economic power.

It is therefore unfortunate that when occupational evaluations are grouped into fewer categories for the purposes of various types of analysis or presentation, these groups are usually called classes, whether or not the original evaluations were socioeconomic or status-based. Although occupations per se are elements in the economy, the fact that a socioeconomic measure like the US Census SES explains only about half the variance in the prestige-based Duncan SEI (and vice versa) is a reminder that the class and status aspects of occupation are not identical.

Also not to be overlooked is the uncertainty with respect to counting of women's occupational roles, in estimating a family unit's class standing. These are only two

of the grounds for the conceptual confusion that surrounds the business of stratification measurement.

In a period when sociologists are increasingly breaking out of their national and cultural blinders, Treiman's contribution of the International Standard Classification of Occupations is a particularly welcome development; it permits, if only in a limited way, the kind of comparative measurement that has for too long been lacking. However, it too relies on public evaluations of occupational prestige, and while useful and important, does not address the issue of social stratification in class terms.

Sociologists are plagued by unresolved issues of validity and reliability in operationalizing concepts; a solution to the problem of measurement error should be high on the methodological agenda. In this general context, overcoming measurement shortcomings in the fundamental sociological concept of stratification calls for top scientific priority for the whole discipline.

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