A COMPARISON OF INDEXES OF SOCIO-ECONOMIC STATUS *

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IN the past twenty years many indexes have been devised as measures of the socio-economic status of individuals. The task has been complicated by the fact that investigators have not agreed upon precise definitions of the term "socio-economic status" (or its several synonyms); therefore they sought a short and usable index for a loosely defined and unmeasured variable.[1]

This variable has been conceived of in different ways: as a unidimensional attribute that could be directly measured if we had adequate tools; as a unidimensional attribute, but one that must be measured indirectly; as a unidimensional composite that cannot be directly measured, made up of several interrelated attributes that are measurable and can be combined in an index; as a complex of attributes that are interrelated, but do not form a single dimension and thus should not be measured, directly or indirectly, as a totality. Many researchers have avoided the logical and definitional problems by using a measurement that supposedly maximized prediction of certain behavioral consequences of status position, however it be defined. Usually these investigators have offered a new index that proved useful in the context of a given research situation without indicating how it was related to other measurement devices. The result has been proliferation and confusion, with only a few attempts to study the relations among the indexes themselves.[2]

This article reports an additional study of the inter-correlations among standard measurement tools. Information was collected from over two hundred adult men; 19 scores were computed for each respondent which measured some aspect of his socio-economic status; these scores were then inter-correlated and subjected to factor and cluster analysis. The 19 measures were not all independent; many were simply alternative ways of scoring the same variable (such as occupation), for the field worker needs guidance about their relative efficiency. Some additional data are presented comparing open-ended and closed questions on the status self-identification of the respondents.

THE DATA

Using students in a 1953 Harvard University course on social stratification as interviewers, we approached 219 men in their homes in Cambridge, Massachusetts, and asked them for the information needed to compute scores on most of the indexes of stratification position used in contemporary

* The authors are grateful for the support of the Harvard Laboratory of Social Relations, the assistance of Mrs. Hope Leichter, and the advice of Professors Peter H. Rossi, Ray Hyman, and Daniel O. Price.

[1] For a brief discussion of the logical problems involved and references to many attempts to solve them in practical situations, see the section on Methodology in Harold W. Pfautz, "The Current Literature on Social Stratification: Critique and Bibliography," *American Journal Sociology,* LVIII (1953), pp. 394–99.

[2] Among them are: George A. Lundberg, "The Measurement of Socio-Economic Status," *American Sociological Review,* V (1940), pp. 29–39; Louis Guttman, "A Revision of Chapin's Social Status Scale," *ibid.,* VII (1942), pp. 362–69; Raymond B. Cattell, "The Concept of Social Status," *Journal of Social Psychology,* XV (1942), pp. 293–308; G. A. Lundberg and P. Friedman, "A Comparison of Three Measures of Socio-Economic Status," *Rural Sociology,* VIII (1943), pp. 227–36; Genevieve Knupfer, *Indices of Socio-Economic Status: A Study of Some Problems of Measurement,* New York: author, 1946; Ph.D. Thesis, Columbia University; Richard Centers, "Toward an Articulation of Two Approaches to Social Class Phenomena, Parts I and II," *International Journal of Opinion and Attitude Research,* IV (Winter, 1950–51), pp. 499–514, V (Summer, 1951), pp. 159–78; Otis Dudley Duncan and Jay W. Artis, *Social Stratification in a Pennsylvania Rural Community,* State College, Pa.: Bulletin 543, Pennsylvania State College of Agriculture, October, 1951; F. H. Finch and A. J. Hoechn, "Measuring Socio-Economic or Cultural Status: A Comparison of Methods," *Journal of Social Psychology,* XXXIII (1951), pp. 51–67; Neal Gross, "Social Class Identification in the Urban Community," *American Sociological Review,* XVIII (1953), pp. 398–404.

research. We restricted our sample to men between the ages of 30 and 49 in order to get persons who were at the peaks of their occupational careers, thus minimizing the effects of differential positions in the life cycle. And to reduce ethnic variations, we eliminated all Negroes and those whites who did not complete their educations in the United States.

Cambridge is a mixed industrial and residential area contiguous to Boston. We first rank-ordered the 30 census tracts by average monthly rent; next chose 15 alternating tracts on the list, eliminating those immediately adjacent to the University; then gave each interviewing team of two students a specific tract to cover, and instructed the team to choose any available 16 respondents who could be found in their homes within the tract boundaries. There were 219 usable schedules out of a possible 240. Obviously, we were not seeking a random sample of any specified universe, but rather a sample with sufficient representation of all levels of the status hierarchy to permit various internal comparisons. When the occupational distribution of the men in our sample is compared to that for all employed men in the Boston metropolitan area, as given in Table 1, it can be seen that the sample is over-weighted at the professional level, but otherwise does not differ markedly.

Our schedule included questions about the respondent's three best friends (chosen by the respondent from among his friends and

TABLE 1. PERCENTAGE DISTRIBUTION AMONG OCCUPATIONS, RESEARCH SAMPLE AND EMPLOYED MEN IN BOSTON METROPOLITAN AREA

Occupation	Sample	Employed Men *
	Per Cent	Per Cent
Professional, technical and kindred	19	11
Proprietors, managers and officials	10	13
Sales workers	9	9
Clerical and kindred	8	9
Craftsmen, foremen and kindred	24	21
Operatives and kindred	17	20
Service, exc. private houshold	7	9
Laborers, inc. private household	5	7
Never in labor force, or uncodeable	1	1
Total	100	100

* Source: U. S. Bureau of the Census, *1950 Census of Population*, Vol. II, Part 21, Table 35, Washington: Government Printing Office, 1952.

defined as those with whom house visits were exchanged at least once a month). Each friend was given an occupational code (North-Hatt—see below) and the scores for the three (or fewer, if less than three were mentioned) were averaged. This average score for each respondent was used as a measure of his level of social participation in the community—a useful substitute in the metropolitan community for the information that investigators in small towns get through sociometric questions and interviews concerning personal reputation. In some of the interpretations below, this score is used

TABLE 2. TETRACHORIC CORRELATION MATRIX; NINETEEN STATUS INDEXES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1																			
2	.80																		
3	.77	.81																	
4	.93	.70	.70																
5	.81	.70	.65	.50															
6	.57	.63	.52	.59	.49														
7	.75	.69	.53	.74	.63	.34													
8	.73	.69	.75	.71	.63	.59	.60												
9	.48	.57	.60	.39	.55	.65	.41	.53											
10	.78	.59	.65	.86	.54	.62	.62	.60	.39										
11	.53	.36	.41	.47	.46	.64	.50	.43	.38	.41									
12	.54	.48	.45	.43	.51	.48	.50	.32	.30	.34	.76								
13	.54	.60	.53	.53	.48	.65	.44	.41	.57	.30	.33	.28							
14	.49	.46	.43	.39	.36	.50	.38	.30	.35	.45	.62	.92	.49						
15	.37	.48	.54	.36	.46	.48	.47	.40	.86	.23	.45	.37	.61	.40					
16	.43	.39	.45	.40	.44	.68	.43	.47	.49	.35	.43	.62	.54	.46	.29				
17	.49	.82	.59	.50	.43	.45	.40	.40	.39	.47	.39	.20	.25	.37	.29	.16			
18	.51	.34	.36	.41	.52	.34	.56	.34	.39	.34	.63	.35	.30	.22	.21	.35	.23		
19	.29	.45	.41	.22	.29	.48	.35	.32	.48	.20	.36	.27	.52	.14	.52	.44	.20	.13	

as a criterion measurement of current behavior to be predicted by other indexes.

Tetrachoric correlations were used for convenience in machine tabulation. The inter-correlations among the indexes are shown in Table 2. The nineteen measures were dichotomized as close to the median as possible, in the following ways:

1. Warner occupational category:[3] 1–4 vs. 5–7.
2. Occupation of friends, North-Hatt category:[4] approximately: average scores of 75–96 vs. 33–74
3. Subject's education: some training beyond high school vs. high school graduation or less
4. Census occupational category of subject:[5] clerical and above vs. craftsman or below
5. North-Hatt occupational category of subject:[4] scores 63–96 vs. 33–62
6. Wife's father's occupation, Census category:[5] clerical and above vs. craftsman or below
7. Interviewer's impressionistic rating of subject:[3] in Warner terms: upper, upper-middle, lower-middle vs. common man (undifferentiated), upper-lower, lower-lower
8. Self-identification (Centers) of subject:[6] upper, upper-middle, undifferentiated middle, lower-middle vs. working and lower
9. Subject's mother's education: part high school or more vs. grade school or less
10. Source of income (Warner):[3] wealth, profits and fees, salary vs. wage or relief
11. Census tract, mean monthly rent:[7] tract ranks 1–12 vs. 13–30
12. Interviewer's rating of residential area, Warner category:[3] 1–4 vs. 5–7
13. Subject's father's occupation, Census category:[5] clerical and above vs. craftsman or below
14. Interviewer's rating of house, Warner category:[3] 1–4 vs. 5–7
15. Subject's father's education: part high school or more vs. grade school or less
16. Wife's father's occupation, North-Hatt category:[4] scores 63–96 vs. 33–62
17. Subject's wife's education: high school graduate or more vs. part high school or less
18. Annual family income: $5,000 or over vs. less than $5,000
19. Subject's father's occupation, North-Hatt category:[4] scores 63–96 vs. 33–62

Table 2 is useful as it stands. For instance, if one is interested in the average occupational level of a man's three best friends as a criterion of status participation, he can immediately rank order the various indexes according to their power as predictors thereof. (Incidentally, additional data not published in this article show that approximately the same rank order of indexes holds for the prediction of certain aspects of ideology that are class-related.) Or, one can observe that the subject and the interviewer equally use occupation as an important clue to status position, but the subject weights education more than the interviewer does. However, it is possible to analyze the information in the table more systematically, and we used two alternative but complementary methods to do so: factor analysis and cluster analysis.

FACTOR ANALYSIS

The relatively high positive correlations among the variables suggest that they all may be indexes of the same underlying factor but measure it with varying degrees of approximation: that is, each measures (in differing proportions) both the general factor and idiosyncratic attributes specific to itself. This situation presents an exact parallel to the one which results from a battery of intelligence tests, and we can use the pro-

[3] W. Lloyd Warner, *et al., Social Class in America,* Chicago: Science Research Associates, 1949.

[4] National Opinion Research Center (C. C. North and P. H. Hatt), "Jobs and Occupations: A Popular Evaluation," in *Class, Status and Power,* Reinhard Bendix and Seymour M. Lipset, (eds.), Glencoe, Illinois: The Free Press, 1953, pp. 411–26. This article gives a rank order of the "general standing" of 90 occupations as judged by a national sample of American adults. In our coding we divided it into seven levels, and scored occupations not on the list by analogy. We predicted that this particular occupational code would maximize prediction of related variables as it was based on public (rather than armchair) opinion; we were wrong.

[5] U. S. Bureau of the Census, *1950 Census of Population, Classified Index of Occupations and Industries,* Washington: Government Printing Office, 1950. We reversed the order of clerks and salesmen. Thus the dichotomy we used was professionals, proprietors and managers, salesmen and clerks vs. craftsmen, operatives, service workers, and laborers.

[6] Richard Centers, *The Psychology of Social Classes,* Princeton: Princeton University Press, 1949.

[7] U. S. Bureau of the Census, *1950 Census of Housing,* Vol. V, Part 26, Washington: Government Printing Office, 1951.

cedure that the psychologists developed to study I.Q.: factor analysis.

This technique allows us to identify indirectly the general component, subtract its contribution to the observed inter-correlations, and see what remains. If the remaining correlations are small, we conclude that there exists a single dimension of socio-economic status distributed among our measures. But if the remaining correlations are large, we conclude that there are two or more separate components to socio-economic status, and we can then search for the best measures of each of them. The technique is far from automatic and definitive; decisions based on judgment are involved in its application, for instance, the judgment of when to stop extracting additional common factors. Furthermore, it should be noted that all our results are but approximations, for some of the conditions for factor analysis are not fully met by our data.

Our first approximation, using the centroid method,[8] did indeed reveal a general factor with high correlations with many of our variables, ranging from .88 with the Warner occupational scale to .49 with subject's father's occupation on the North-Hatt scale. (See the column headed "k" in Table 3.) This approximates the best single dimension accounting for the inter-correlations among the variables. But it was possible to control more variance by extracting two common factors instead of one general factor. The two common factors taken together accounted for most of the variance of the original variables, so it was not worth while to seek a third factor.

The details are shown in Table 3. The column headed "h^2" (the "communality") gives a rough estimate of the proportion of the variance of a given variable that can be accounted for by its relationship to all potential common factors combined ($1-h^2$ includes variance due to the specificity of the given variable plus measurement error). The column "k" shows the "loading" or correlation of a given variable with the one general factor. Columns "k_1" and "k_2" show the loadings with each of the two common factors. Since the communality of a given variable equals the sum of its squared loadings on all potential common factors ($h^2=k_1^2+k_2^2 \ldots +k_n^2$), the column "$h^2-(k_1^2+k_2^2)$" shows the residual communality after that due to the two common factors has been removed.[9] The table was

TABLE 3. RESULTS OF FACTOR ANALYSIS

	Variable	h^2	$h^2-(k_1^2+k_2^2)$	k	k_1	k_2
1.	Warner occupation	.86	−.04	.88	.88	.36
4.	Census occupation	.86	+.07	.80	.84	.29
2.	Friends' occupations	.67	−.16	.85	.83	.37
10.	Source of income	.74	+.07	.72	.78	.24
3.	Subject's education	.66	−.07	.82	.75	.41
8.	Self-identification	.56	−.05	.74	.71	.33
7.	Interviewer's rating of subject	.56	−.04	.75	.67	.39
5.	North-Hatt occupation	.66	+.06	.77	.64	.44
17.	Wife's education	.67	+.23	.59	.63	.20
11.	Census tract	.58	−.02	.70	.26	.73
12.	Area rating	.85	+.28	.67	.22	.72
6.	Wife's father's occupation, Census	.46	−.18	.77	.37	.71
9.	Subject's mother's education	.74	+.16	.72	.33	.69
15.	Subject's father's education	.74	+.21	.65	.23	.69
14.	House rating	.85	+.33	.65	.24	.68
16.	Wife's father's occupation, North-Hatt	.46	−.04	.63	.22	.67
13.	Subject's father's occupation, Census	.42	−.08	.67	.32	.63
19.	Subject's father's occupation, North-Hatt	.27	−.03	.49	.18	.52
18.	Income	.40	+.12	.53	.36	.39

[8] J. P. Guilford, *Psychometric Methods*, New York: McGraw-Hill, 1936, Chapter 14.

[9] Tetrachoric correlations standardize the distributions of the variables, giving each a variance of 1. Therefore, the variances of the 19 measures sum to 19. Since the square of a correlation coefficient is an estimate of the proportion of the

computed after a 45-degree rotation of axes; plotting suggests that a slightly better fit could be obtained by the use of oblique axes.

The factor analysis shows that the first common component (k_1) in our indexes is most closely related (in rank order) to the Warner occupational scale, the Census occupational scale, occupation of friends, source of income, education of subject, self-identification of subject, interviewer's impressionistic judgment of subject, the North-Hatt occupational scale, and wife's education—the top half of Table 3. Naturally, we expected the various scales for the subject's occupation to measure the same thing with slightly different degrees of approximation. Since source of income (wage vs. salary) is in fact another form of occupational scale, it too should fit here. Education of subject belongs because it is the best single predictor of occupation that is available, and the education of the wife usually comes close to that of her husband. Apparently these factors combined determined choice of friends. Finally, the inclusion here of the interviewer's impression of the subject and the latter's own self-identification indicate that both used the aforementioned "objective" characteristics as the basis of their judgments. Note that most of these variables may be considered as measures, causes or consequents of occupational position; the first common factor "makes sense."

The second common factor (k_2) is most closely related to the various measures of the house and the residential area, and to those of the status of the parents of the subject and his wife—the bottom half of Table 3. It is not immediately apparent why these two types of variables should be so closely related, and why they should be clearly distinguishable from the items in the first factor. One possible explanation is in terms of life cycle sequences, particularly for socially mobile persons. A man makes a basic decision about his career by deciding how long to stay in school. After he is educated, he picks a wife of roughly the same schooling, and enters an occupational level that is largely determined by his training in school. Presumably, he chooses friends appropriate to his own level, and begins to think of himself in terms of that level. But there may well be a lag with respect to his housing; a cautious man will not buy a big new house until his career is far enough advanced that he is sure he can afford to pay the mortgage. Consequently, measures of his housing may not be too closely related to those of his occupation but may reflect an earlier period of his career: he may live for a while as did his parents. Is this an instance of "cultural lag" within the life cycle? This argument applies particularly to young professionals, and our sample is over-loaded with them. (And there may be "status consciousness" differences that will make some people more concerned than others with having their status symbols harmoniously matched.)

The research man who wants to use our results as a guide for his procedures must remember that our sample is small and somewhat biased, that inductive statistics capitalize on chance, that the technique of factor analysis has limitations, that our tetrachoric correlations are based on dichotomies and thus overemphasize cases in the middle of the distribution. But pending replication, he can tentatively conclude that "socio-economic status" is an accurate though clumsy term: there is a composite of social and economic attributes that tend to cluster together, and we can measure the composite fairly well. For many purposes, it is practical to treat this composite as one dimension—the general factor. The best single index of it is an occupational scale. (Warner's has a higher loading, but the Census Bureau gives details that make coding more reliable.) Some improvement in measurement can be had by combining occupation and one of the variables from the second common factor, such as Census tract, with a heavier weight given to the former. It is probably not practical in most instances

variance accounted for by the correlation, the sum of k^2 (9.63) is an estimate of the proportion of the total variance accounted for by k. It equals 51 per cent of 19. Likewise, k_1 accounts for 31 per cent, k_2 for 28 per cent, and (k_1+k_2) for 59 per cent of the total variance. Since the square of the guessed communality is an estimate of the proportion of the total variance accounted for by all possible factors, the ratio of h^2 to the squares of the factor loadings gives an estimate of the proportion of the total common factor variance controlled by the various factors. Thus, k accounts for 80 per cent, k_1 for 48 per cent, k_2 for 44 per cent, and (k_1+k_2) for 92 per cent of that part of the total variance which can be explained by common factors.

to add more variables to a composite index.

For some purposes the researcher might prefer an index of a somewhat purer dimension, the first common factor, which is concerned more closely with occupation and its satellite variables. If so, he should use an occupational scale as his main index, with either source of income or education as a secondary criterion.

Income stands in sulking isolation. It has an equal loading on both common factors, and not a very high one at that. Why is the amount of family income a poor measure of socio-economic status? Observation suggests that the core of status is a culturally defined, group-shared style of life, and income is a necessary but not a sufficient condition thereof. Values intervene between the receipt of a paycheck and its expenditure in conspicuous consumption. A satisfied blue collar worker and an ambitious clerk may have the same income but a different mode of living. The former is likely to have a bigger house in a cheaper neighborhood, to spend more on automobiles, to save less, and to have working class friends and beliefs. There is a great deal of overlap and variability at precisely this point of the stratification hierarchy, and it is at this point that we had to arbitrarily dichotomize our variables. Income is probably a good index at the extremes, but weakens as one approaches the great "common man" group at the middle of our system.[10]

Our results partially support the study of the small town of Jonesville, reported by Warner in *Social Class in America*. He was able to predict Evaluated Participation (EP), a complex rating of social reputation and participation based on free interviews, by the Index of Status Characteristics (ISC), which consisted of occupation, source of income, house type, and dwelling area, weighted 4, 3, 3, and 2, respectively. He got a product moment correlation of .91 between occupation and EP, and a startling multiple correlation of .97 between the entire ISC and EP. However, his sample was highly biased with extreme cases that inflated the coefficients (about half were upper or upper-middle class). We were able to get a product moment correlation of .74 between occupation (Warner) and status of friends, and a multiple correlation of .80 between occupation plus education and status of friends. (The partial correlation between occupation and friends was .43, between education and friends was .21.) The important comparison is the relative rank of predicting indexes, not the absolute size of the correlations, and our data agree with Warner's that occupation (as he measures it) is the best predictor of either social participation or the whole socio-economic cluster represented by the general factor. He found that amount of income, source of income, house type, dwelling area and education (in that order) were the next best predictors of EP. Our order was slightly different: after occupation as a measure of the general factor came education, source of income, dwelling area, house type, and amount of income.

CLUSTER ANALYSIS

While factor analysis partitions a set of inter-correlations into a few basic components and shows the relationship of each variable to those components, cluster analysis directly groups together those variables whose inter-correlations are especially high and offers a standard criterion for rejecting other variables which come close to those in a cluster but are not as intimately related to them as they are to each other.[11] The cluster is based on the ratio of the correlations of two or more variables with each other to their correlations with all the variables outside the cluster. High inter-correlations will *not* produce a cluster if the related variables share high correlations with outside variables—in other words, if their relationship is primarily a result of shared loadings on common factors. Therefore, our results may be thought of as producing subgroupings *within* each of the two major groupings indicated by the two common fac-

[10] Kahl has offered a description of the "common man" way of life in the Boston area, based on free interviews, in "Educational and Occupational Aspirations of 'Common Man' Boys," *Harvard Educational Review*, XXIII (1953), pp. 186–203.

[11] Robert C. Tryon, *Cluster Analysis*, Ann Arbor, Michigan: Edwards Bros., 1939. For an interesting example of the use of the method to identify culture areas by the clustering of traits (with full details on procedure) see Forrest E. Clements, "Use of Cluster Analysis with Anthropological Data," *American Anthropologist*, LVI (1954), pp. 180–99.

TABLE 4. RESULTS OF CLUSTER ANALYSIS

Cluster	Variables	B-Coeffcient
1	12. Area rating	
	14. House rating	2.233
2	15. Subject's father's education	
	9. Subject's mother's education	1.969
3	2. Friends' occupations	
	17. Wife's education	1.748
4	4. Subject's occupation, Census	
	1. Subject's occupation, Warner	
	10. Source of income	1.696
5	16. Wife's father's occupation, North-Hatt	
	6. Wife's father's occupation, Census	1.478
6	11. Census tract	
	18. Income	1.463
7	3. Subject's education	
	8. Subject's self-identification	1.427
8	19. Subject's father's occupation, North-Hatt	
	13. Subject's father's occupation, Census	1.319

tors, sub-groupings which have some *additional* close relationship *after* the common factor has been controlled.

Table 4 shows the clusters that meet the criterion; the higher the B-coefficient the tighter the special relationship between the variables in the cluster. The conventional minimum for this measure is 1.300.

The close relationship between house and area scores (cluster 1) is not surprising, for they are both impressionistic ratings by the same interviewer, made by looking at the house and the neighborhood before interviewing the subject. The relationship is the result of ecological patterning plus interviewer effect.

Clusters 4, 5, and 8 are replicating measures of the same variable. Cluster 2 indicates that a man's father married his mother partly because she had an education similar to his. (The relation between subject's education and that of his wife is not reflected in a cluster because of their high shared loadings on the first common factor.) Cluster 3 suggests that although a couple choose friends of similar occupational level, the wife has some additional voice in the matter. Cluster 6 indicates that family income and average rent of census tract are especially close. Finally, Cluster 7 indicates that education is a variable that is closely related to a man's vision of himself.

SELF-IDENTIFICATION

In this final section we take a closer look at one of our measures of status: the respondent's conception of himself. Many investigators have been interested in subjective identification as a criterion of class membership because it may be the key intervening variable between objective indexes like occupation and specific attitudes and behavior. However, various ways of asking the question "Who are you?" produce varying results. The Warner school maintains that the question cannot be directly put because the American value system of equality leads people to deny differentiation. Consequently, they recommend that we listen to a wide range of verbalizations, observe behavior in many situations, and then abstract out the *implied* self-identifications by noting the invidious distinctions that appear. Centers, in *The Psychology of Social Classes,* was more direct; he bluntly asked a man whether he was upper, middle, working, or lower class. But critics said that this told us too much about the categories in Centers' mind and not enough about those of his respondents. Gross (cited above) approached the problem by first using an open-ended question about class membership, and then following it with the Centers question. The results were disparate, and he remained unhappy about the validity of closed items. We followed a procedure similar to that of Gross but took the additional step of cross-classifying the answers.

We first asked this question:

> There has been a lot of talk recently about social classes in the United States. I wonder what you think about this. What social classes do you think there are in this part of the country?

We followed that by a series of items designed as standardized probes:

> Which social class do you think you are in?
> What puts you in that class?
> Which class is next below yours in social standing?
> In what ways are people in that class different from people in your class?
> Which class is next above yours in social standing?
> In what ways are people in that class different from people in your class?

Finally, we asked the Centers question, along with an additional probe:

> If you were asked to use one of these four names for your social class, which would you say you belonged in: the middle class, the lower class, the working class, or the upper class?
>
> If *middle:* Would you say you were in the upper-middle or the lower-middle? (If no discrimination, answer was coded "middle.")

These questions came after those on the subject's occupation, income, and education, so our respondent was somewhat warned of the areas of our interest. In coding the replies, we combined information from the whole battery of open-ended questions. We found that 12 per cent of our respondents had no conception of a class order; 6 per cent understood the questions well enough to explicitly deny that a class order existed in the United States; 5 per cent recognized a class order, but either disapproved of it so strongly that they did not want to describe it, or said it was too complex to describe; 10 per cent said it contained two strata; 42 per cent claimed it consisted of three strata; 20 per cent recognized four strata; and 5 per cent detected five or more strata.

Of those who described a system with a given number of strata, 61 per cent used as the main criterion of differentiation income and/or the style of life it bought; 8 per cent mentioned a specific occupational level as the main criterion (such as "professionals"); 9 per cent used morals (including motivation to work); 16 per cent insisted that there was no single criterion; and the few remaining answers were scattered among family background, education and training, and innate ability. Ethnic criteria were seldom used. The category of morals was most popular as the secondary criterion. As has been noticed before, there was a slight tendency for those lower on the socio-economic scale to stress income, and those higher on the scale to stress quality and morals.[12]

In describing their own class position sixty-nine per cent of our respondents spontaneously used labels that approximated the ones which appear on the Centers list (as amended by us). The details are shown in Table 5, which cross-classifies the open and closed responses. There are several interesting patterns: those who spontaneously used labels at the extremes (upper-middle, working, or lower) were consistent, and gave the same reply when re-questioned with fixed alternative answers. However, those who spontaneously called themselves middle class wavered on the closed question, *with over a third changing their answers to working class*. Half of those who gave varied labels on the open question (classified as "other"), and over two-thirds of those who denied the existence of class or could not give any answer at all on the open question, called themselves working class when given the fixed alternatives.

When we examined the occupations of the various types of respondents, we found that those who called themselves upper or upper-middle were mostly professional men; those who called themselves middle or lower-middle on both the open and closed questions tended to be professional men, businessmen, salesmen, or clerks; whereas those who called themselves middle on the open but working on the closed questions tended to be skilled or semi-skilled workers. The respondents who chose working on both

TABLE 5. CLASS SELF-IDENTIFICATION: OPEN AND CLOSED QUESTIONS

Identification on Open Questions	N	Identification on Closed Questions: U	UM	M	LM	W	L	N.A.
Upper	3	2	..	..	..	1	..	..
Upper-middle	9	2	6	..	1	..	..	..
Middle or synonym	97	1	23	19	18	36	..	..
Lower-middle	7	1	..	..	4	2	..	..
Working or synonym	30	..	..	2	..	27	..	1
Lower	5	..	..	..	..	..	5	..
Intellectual or professional	9	2	6	..	1	..	..	..
Other occupational categories	5	1	1	1	..	2	..	..
Other	15	1	2	3	..	8	..	1
Denies class, or no conception, or no answer	39	..	3	2	2	27	2	3
Total	219	10	41	27	26	103	7	5

[12] Hadley Cantril, "Identification with Social and Economic Class," *Journal of Abnormal and Social Psychology,* XXXVIII (1944), pp. 74–80.

sets of questions tended to be skilled workers, the confused men who denied or had no conception of class or used a special label for their position on the open questions and used middle on the closed tended to be small businessmen, whereas the persons who gave those answers on the open questions but switched to working on the closed were mostly semi-skilled operatives.

It appears, then, that if sufficient probes are used it is possible to get a description of the class system with open-ended questions. Although there is some denial and much variation, there is also a core of consensus. The majority of our respondents saw the system as a rough division of the population into three or four strata representing occupation-consumption levels. Almost half spontaneously put themselves into the middle, but when specific alternatives were forced on them, they made finer distinctions and further divided themselves into a lower-middle range of white collar workers and an upper working class range of successful blue collar workers. The closed answers provided more information than the open because they forced the common man group to sub-divide themselves and the doubters to commit themselves. Yet these forced answers appeared consistent with the earlier free answers if interpreted with occupational data at hand.[13]

SUMMARY

Factor analysis of scores on 19 stratification indexes for 219 men showed that the indexes were highly correlated because they all, in varying degrees, measured the same underlying dimension. For rough purposes, this common component could be conceived of as a single dimension or general factor. However, a more precise statement would be that the battery of indexes showed two common factors. The first was composed of the various measures of occupation, plus certain variables closely related to occupation, such as education, self-identification, and the interviewer's impressionistic rating of the subject. The second factor was composed of ecological measures plus those of the status of the parents of the subject and his wife.

The two common factors accounted for most of the mutual variance of the original indexes. The little that remained was studied via cluster analysis. It revealed certain subgroupings of variables that were highly related to each other after their mutual relationships to the common factors were controlled. These turned out to be mainly clusters of indexes that were replicating measures of the same variable, a further indication of the fact that the two common factors "explained" most of the important relationships among the 19 indexes. The two techniques were applied independently; each started with the inter-correlation matrix. They proved to be complementary ways of reducing the matrix to simpler and more understandable form.

Finally, the answers of the respondents to a series of open-ended questions about their conceptions of the class system and their own positions within it were compared to their answers to the Centers closed item on self-identification. It was found that the majority of respondents in their free answers agreed about the basic outlines of a three or four class system of occupation-consumption strata. Almost half put themselves into the middle level. When faced with the closed alternatives, a third of these changed their minds and called themselves working class. The meaning of this inconsistency was explored.

[13] For a parallel study in Britain, see F. M. Martin, "Some Subjective Aspects of Social Stratification," in *Social Mobility in Britain,* D. V. Glass, ed., London: Routledge and Kegan Paul, 1954.

The findings suggest that a non-verbal instrument might avoid some of the difficulties of this approach. A study in preparation by J. A. Davis indicates that if subjects are asked to place themselves "higher" or "lower" in social standing than photographs of people and living rooms, acceptable Guttman scales of up to 23 scale types result (which show strong association with standard measurement indexes).