

Measure of Level of Occupational Aspiration

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LEVEL OF OCCUPATIONAL ASPIRATION (LOA) has recently come into fairly wide use as a variable presumably important in the social mobility behavior of youth [4, 7-9, 13, 15, 16]. Research to date testifies to the importance of the concept but its use is restricted by the lack of a practicable, reliable, and valid instrument for measuring it. The purpose of this paper is to examine a new measure of LOA, the Occupational Aspiration Scale (OAS) [6], and to assess its potentials for research and high school counseling purposes.

THE CONCEPT

We define LOA as the area (a point or limited range of points) of the occupational prestige hierarchy which an individual views as a goal. The range of an individual's LOA is bounded in two general ways: (1) by what he views as realistically probable *versus* idealistically desirable for him, and

(2) by the goals which he has for the near *versus* the distant future [10]. A subject cannot adequately respond to an LOA measurement unless both the realistic or idealistic and the time boundaries are explicitly specified.

In 1948, all high school junior and senior boys in a semi-urban area of Wisconsin (Jefferson County) completed a battery of tests and questionnaires measuring some 50-odd variables presumably involved in social mobility (W. H. Sewell, unpublished). One of the variables was a crude measure of LOA based on an open-ended instrument. In 1955, levels of educational and occupational attainment were measured on the same group. The 1948 measure of LOA was the best single predictor both of number of years completed at college ($r = +0.52$) and of the prestige level of occupations attained by 1955 ($r = +0.46$).

These correlations indicate that LOA is at least a moderately successful predictor of levels of educational and occupational attainment. This is noteworthy because of the length of time involved and because these correlations are based on a crude measure of LOA. Especially impressive is the fact that the predictive efficiency of all other variables assessed in the project was lower, even though many of these variables are widely thought to be important in educational and occupational attainment. For example, several other correlations with educational and occupational attainment, respectively, were: college plans while in high school (+0.40, +0.17), high school grade-point average (+0.41, +0.34), intelligence (+0.32, +0.20), and parental socio-economic status (+0.28, +0.28). The latter coefficients are generally consistent with those found in previous research.

Such findings suggest the promise of LOA.

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But there are no adequate instruments for measuring the variable. Obviously, an adequate instrument would permit more thorough exploration of academic achievement and social mobility, and might (after proper evaluation) help the high school counselor understand better the behavior of his students.

DESIGN OF THE OCCUPATIONAL ASPIRATION SCALE

The OAS is a multiple-choice instrument. It is designed primarily for use among male high school students. It *may or may not* be useful among high school girls and among youth at other levels of school; this has yet to be demonstrated. The OAS uses the fact that LOA questions must specify idealistic or realistic levels at particular future time periods as the basis for constructing an LOA measure having a single score for each person. Estimates are elicited at each of two career points: short-range (S) and long-range (L) for the realistic level (R) and for the idealistic level (I). These yield four combinations: RS, IS, RL, and IL, which are incorporated into four wordings for questions. The question wordings are presented in TABLE 1. Each of these four questions is presented twice, thus giving a total of eight OAS items.

The numbers in parentheses in TABLE 1 indicate the question-numbers in which each item-wording is used, while the letters in parentheses refer to the combination of levels and goal-ranges for each question.

The response alternatives for each OAS item consist of 10 occupational titles drawn systematically from among the 90 occupations ranked by the National Opinion Research Center's study of the prestige of occupations [11]. For various reasons, the 10 least appropriate were dropped. Therefore a total of 80 occupations is used. These were ranked from first to eightieth. The title with the highest rank was placed in the first question, the title with the second highest rank was placed in the second question, and so on down to the title with lowest rank which was placed in the eighth or last question. Tied occupational titles were arbitrarily assigned to questions. TABLE 2 summarizes the relationship between the NORC prestige scores and the format of the OAS.

Each set of occupational alternatives spans the full range of occupational prestige and is scored from zero to nine. Each occupation is presented only once among the eight items. An item score of 9 means that the respondent has chosen the highest prestige occupation in the item, while an item score of 0 indicates that he has chosen the lowest prestige occupation. The sum of the eight item scores may range from zero to seventy-two. This score is taken as a measure of the individual's LOA.

Administration and Scoring. The OAS takes about twenty minutes to administer. It may be given individually or in group testing situations. The meanings of the occupational titles and questions are not explained to respondents. One aim of this is

TABLE 1
OAS FORMAT: COMBINATION OF LEVELS AND GOAL-RANGES
FOR EACH OF THE FOUR QUESTION-WORDINGS

Level	Goals	
	Short-range (S)	Long-range (L)
Idealistic (I)	Of the jobs listed in this question, which ONE would you choose if you were FREE to CHOOSE ANY of them you wished when your SCHOOLING IS OVER? (2 and 4)	Of the jobs listed in this question, which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished? (6 and 8)
Realistic (R)	Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER? (1 and 3)	Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD? (5 and 7)

to reduce error due to differences among administrators. Another aim is more complex. Ignorance of the meaning of occupational titles may restrict one's true LOA. In the real world a person must choose among the alternatives he knows. If a certain youth's knowledge is restricted to the low prestige occupations, he would truly be forced to choose among these. Thus ignorance limits aspiration. When the meanings of occupational titles are not explained to the student, his responses to the OAS properly record the limitations on his aspirations which are due to his lack of knowledge.

The forms may be scored by hand in one to two minutes. Extensive normative data are not yet available. However, percentile scores based on present data are available [8]. Means and standard deviations are presented below.

Because it may be administered simply and rapidly to individuals or groups, because it may also be scored simply and rapidly, and because it may be interpreted easily, we conclude that the OAS is a practicable instrument.

Samples and Data. The OAS has been administered to numerous samples. The

TABLE 2
SUMMARY OF THE RELATION BETWEEN THE NORC OCCUPATIONAL
PRESTIGE SCORES AND THE OAS FORMAT*

NORC Rankings		OAS	
Occupation	Score	Item	Question
1. U. S. Supreme Court Justice	96	1	R-S
2. Physician	93	2	I-S
3. State Governor	93	3	R-S
4. Cabinet Member in Federal Government	92	4	I-S
5. Diplomat in U. S. Foreign Service	92	5	R-L
6. Mayor of a large city	90	6	I-L
7. College Professor	89	7	R-L
8. Scientist	89	8	I-L
9. U. S. Representative in Congress	89	1	R-S
10. Banker	88	2	I-S
11. (Government Scientist)†	88	...	...
12. County Judge	87	3	R-S
13. Head of a department in a state government	87	4	I-S
14. Minister (or)**	87	5	R-L
15. Priest	86		
16. Architect	86	6	I-L
17. Chemist	86	7	R-L
18. Dentist	86	8	I-L
82. Night watchman	47	1	R-S
83. Clothes presser in a laundry	46	2	I-S
84. Soda fountain clerk	45	3	R-S
85. (Bartender)	44	...	...
86. Janitor	44	4	I-S
87. Share cropper—one who owns no livestock or equipment and does not manage farm	40	5	R-L
88. Garbage collector	35	6	I-L
89. Street sweeper	34	7	R-L
90. Shoe shiner	33	8	I-L

* For purposes of economy of presentation, the information in this table is given in abbreviated form. The entire list of occupations and their rankings may be found in the National Opinion Research Center's study [7].

† Titles in parentheses are not used in the OAS.

** Both are combined as a single alternative in the OAS.

most complete of these, and the one on which most of the present evidence is based, consists of the 441 17-year-old boys who were in high school in Lenawee County, Michigan, during the spring of 1957. Additional data from this sample include standardized personality tests, questionnaires, and school records. Published forms used in this report are: (1) The 16-PF Test, Form B [17], (2) The Test of G-Culture Free—Form 3A [1], (3) The California Test of Personality—Secondary AA Form [18], and (4) the Sewell Socio-economic Status Scale—Short Form [14]. Unpublished instruments include two pretested questionnaires, "The MSU Work Beliefs Check List" and the "Occupational Plans of Michigan Youth" [8]. All Lenawee County variables were transformed to normal T-score form. In addition both the regular form (here called Form X) and an alternative form (Form Y) of the OAS were administered to junior and senior boys in the Mason, Michigan, high school, during the winter of 1959.¹ A short questionnaire was also completed by this group. This latter sample is presented in this paper as the basis for a test-retest reliability study of the OAS and for tests of hypotheses about its internal structure.

The distributions of total OAS raw scores for the three administrations of the OAS are approximately normal. For the Lenawee sample ($N = 441$), the total scores range from 2 to 65 with a mean of 36.20 and a standard deviation of 12.99. For the Mason Form X ($N = 114$), the range is 17 to 63 with a mean of 37.24 and a standard deviation of 11.70; for Mason Form Y ($N = 94$), the range is 13 to 66 with a mean of 37.63 and a standard deviation of 11.90.

RELIABILITY

Coefficients of internal consistency (Spearman-Brown) were based on the correlation between parallel halves of the OAS. Each half includes one complete set of

question types (RS, RL, IS, and IL). The coefficients are: Lenawee, 0.82; Mason X, 0.84; and Mason Y, 0.75. A coefficient of stability was based on the correlation between the equivalent Forms X and Y of the OAS administered 10 weeks apart (Mason sample). Equivalent forms were used in place of the usual identical form procedure in order to minimize the effect of memory. The coefficient of stability is 0.77. The reliability coefficients fall within a narrow range having a mean of 0.80. In addition, the standard error measurement (SE_M) for each administration of the OAS was computed. These are: Lenawee, 5.48; Mason X, 4.75; and Mason Y, 5.70.

These results indicate that the OAS has substantial reliability. The halves of the forms appear to be equivalent, and the stability is fairly high over a 10 week period of time.² Finally, the standard errors of measurement estimated for the OAS suggest that reasonable precision in determining individual differences on LOA may be obtained by grouping the OAS scores into high, middle, and low categories.

CONSTRUCT VALIDITY

The most conclusive test of the validity of the OAS would be its efficiency in predicting levels of occupational and educational attainment subsequent to administration. However, this type of validity data is not yet available, since many of the subjects on whom the OAS data were gathered have not completed their education and become stabilized in the world of work. When these data are available, tests of the predictive validity of the OAS will be made. For the present, we shall confine our attention to a more preliminary approach to validation, usually referred to as construct validity [3].

Construct validity attempts to define the quality being measured by determining what theoretical constructs account for test performance, *i.e.*, by demonstrating that

¹ Form Y differs from the main form (X) only in that the order of presentation of the sets of alternatives is reversed. The set of alternatives to question 1 of Form X is used as the alternatives for question 8 of Form Y. Those of question 2 of X are used with 7 of Y, and so on.

² The differences between the means and the variances of the parallel halves of the OAS are not statistically significant. These analyses are presented in Haller and Miller [8, pp. 75-76].

certain explanatory constructs account to some degree for performance on the test. This method admits a wide range of evidence as relevant. In the present analysis, we shall test hypotheses about two kinds of relationships: (1) among the items of the OAS (Internal Structure), and (2) between the OAS total scores and other measures (Correlates).

Internal Structure. Hypotheses about the relationships among the items of the OAS are of two types. The first concerns the elevation of mean scores for the various types of questions, and the second concerns the factorial structure of the OAS instrument.

1. **Elevation of Means.** General level of aspiration theory and research holds that, on the average, level of aspiration at the idealistic level is higher than level of aspiration at the realistic level, and similarly that level of aspiration in terms of long-range goals is higher than level of aspiration in terms of short-range goals [10]. In the OAS, realistic (R) questions are designed to tap a lower limit of the respondent's LOA and idealistic (I) questions are designed to tap an upper limit of the respondent's LOA. Thus on the average, $R < I$. Moreover, the occupational achievement level of an individual is usually expected to rise to some extent during the first decade or so of his career. Thus we can predict that long-range (L) LOA should be on the average higher than short-range (S) LOA, or $S < L$. For the OAS items, specific tests of these hypotheses would be as follows:

$$\text{For } R < I: \bar{X}_{RS} < \bar{X}_{IS} \text{ and } \bar{X}_{RL} < \bar{X}_{IL}$$

$$\text{For } S < L: \bar{X}_{RS} < \bar{X}_{RL} \text{ and } \bar{X}_{IS} < \bar{X}_{IL}$$

The data from Form X administered to the Lenawee and Mason samples confirm both hypotheses. The Mason Form Y data tend to confirm the $R < I$ hypothesis, but contradict the $S < L$ hypothesis. That is, for Mason Form Y the mean of short-range goal items is higher than the mean of long-range goal items at both the realistic and idealistic levels. Statistical tests of these mean differences were not made for two reasons. First, there was evidence that the dif-

ferences among the means of sets of response alternatives presented with each item tended to bias the response levels in the direction hypothesized. Second, the reversal of the S and L levels in the Mason Form Y data appeared to be due to memory factors in the test-retest administration. More rigorous tests of the hypotheses of mean response elevations will be made with a revised form of the OAS now being developed.

2. **Factorial Structure.** Obviously, we are assuming that each question of the OAS contributes to the measurement of a general LOA variable. It follows that we are hypothesizing that the covariance in the OAS may be accounted for by one factor, and that the factor is LOA. We can test the one-factor hypothesis by factor-analyzing the matrix of item correlation coefficients.

The eight OAS item scores were inter-correlated by the product-moment method. The resulting correlation matrix was factor analyzed by the principal axes technique [2] using Guttman's method for estimating communalities [5]. Three factors, accounting for 90 per cent of the total matrix variance, were extracted from the principal axes solution and rotated orthogonally by means of the Quartimax method [12]. This was done for each of the three administrations of the OAS. We report the data only for the Lenawee sample because its N is much larger than that of Mason, and because the results are almost identical [8]. The rotated loadings, principal axes loadings, an communalities are presented in TABLE 3.

A factor loading of 0.40 was arbitrarily selected as a cutting-point for purposes of interpretation. All eight OAS items have moderately high loadings well above the 0.40 criterion on rotated factor I. None of the loadings on factor II are above the criterion. Factor III has one loading, namely item number one, which is at the 0.40 level. Thus, factor I is the only factor which is readily interpretable. Since it is loaded uniformly by all eight OAS items, it may be tentatively labeled high vs. low general LOA. Moreover, it is by far the most important factor since it accounts for 75 per cent of the total matrix variance. Thus, in terms of factor structure the OAS appears

TABLE 3
FACTOR MATRICES AND COMMUNALITIES FOR THE OAS ITEMS*
 (N = 441)

Item	Quartimax Loadings			Principal-Axis Loadings			R ²
	I	II	III	I	II	III	
1 R-S	50	02	40	51	-04	38	41
2 I-S	55	-33	-08	55	-29	-16	42
3 R-S	67	02	24	68	00	21	51
4 I-S	66	-14	07	67	-14	01	47
5 R-L	65	27	-11	64	31	-08	50
6 I-L	64	05	-25	63	11	-26	48
7 R-L	63	23	01	62	24	03	45
8 I-L	65	-23	-02	65	-21	-09	48
% Total Variance	75	8	7	75	8	7	

* Decimal points omitted. All loadings are positive unless otherwise indicated. The intercorrelations, means, and standard deviations of the items are available from the authors upon request.

to be a relatively pure measure of what is evidently a general LOA variable.

Correlates. The following analyses of the correlates of the OAS are of two types. The first concerns the correlation of the OAS total score with another instrument assumed to be a measure of LOA. We shall refer to this as a test of the concurrent validity of the OAS. The second analysis deals with the correlation between the OAS and other non-LOA variables. We shall refer to this as a test of the behavioral-relevance of the OAS.

1. **Concurrent Validity.** An open-ended measure of LOA was included among the forms filled out by the Lenawee sample. This measure is almost identical to an earlier LOA instrument (mentioned in the introduction) which is known to be at least partially valid, having moderate positive correlations with levels of educational and occupational attainment seven years later. Responses to the following questions were coded in terms of actual or estimated NORC rankings of occupational prestige.

1. The occupations which I have thought about going into are:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
2. The occupation that I plan to follow is: _____
3. If I were absolutely free to go into any kind of work I wanted, my choice would be: _____

4. The type of work I would like to be doing by the time I am 30 years old is: _____

The mean prestige score of all different responses was correlated with the total OAS score on a Lenawee sub-sample consisting of all those who gave codable responses to the above questions. The product-moment correlation between the two LOA instruments was found to be +0.62. This coefficient is the nearest thing we have to a concurrent validity coefficient. But its meaning is obscure because the validity of the free-response instrument is far from perfect. Its scores are based in large measure on "educated guesses," and many persons (about 1/3) provide uncodable responses. Yet this instrument has been shown to have some degree of validity. We tentatively take these data as an indication that the OAS is probably a valid instrument.

2. **Behavioral-Relevance.** In this section it is reasoned that if the OAS is valid, it should be correlated with variables that theoretically should influence or be influenced by the variable that it purports to measure. For the most part, these are variables centering around the individual's academic ability and orientations toward the system of formal education, as well as his parents' desire for his advancement and their ability to train him for it and help him achieve it. It is hypothesized that variables such as the above will be correlated with the

OAS scores, and variables other than these will be uncorrelated with the OAS scores. Thirty-two variables obtained from additional Lenawee County data were selected for product-moment correlation with the OAS total score.

Twenty-one variables are significantly correlated with the OAS at the 0.05 level. Number of years of college planned has the highest positive correlation (+0.64) with the OAS. Following this in order of magnitude of correlation are: high school grade-point average (+0.50); intelligence (+0.45); parental desire for respondent's educational achievement (+0.44); socio-economic status of the respondent's family (+0.37); number of high school agricultural courses taken (-0.30); father's educational status (+0.29); belief in internal or self-determination of events (+0.28); total personality adjustment (+0.28); perseverance-determination (+0.26); adventurous sociability (+0.24); parental desire for respondent's high level of occupational achievement (+0.22); positive evaluation of deferred gratification (+0.21); positive evaluation of physical mobility (willingness to break community relationships to get ahead) (+0.20); emotional stability (+0.19); sophistication (+0.16); will control and character stability (+0.16); independent self-sufficiency (+0.14); cyclothymia (+0.13); positive evaluation of structured time (preference for punctuality) (+0.11); and nervous tension (-0.11).

Eleven variables are not significantly correlated with the OAS at the 0.05 level. These are surgency, hysterical unconcern, radicalism, paranoid schizothymia, anxious insecurity, certainty of occupational choice, status anxiety, positive evaluation of change, belief that work is of an expressive versus instrumental value, emotional sensitivity, and dominance.

Clearly the five variables most highly correlated with the OAS fit the hypothesis. At the other extreme, the variables not correlated with the OAS bear no evident relation to LOA. In the mid-region, the variables which have low but significant correlations with the OAS tend to be ambiguous in their conceptual relationship to LOA.

On the whole the evidence, though somewhat mixed, tends to support the hypothesis. Thus we tentatively conclude that the OAS is to some extent valid in that it tends to be correlated with variables with which a valid LOA measure would be expected to be correlated and in that it tends to be uncorrelated with variables with which a valid LOA measure would be expected to be uncorrelated.

SUMMARY AND CONCLUSIONS

The OAS appears to be a practicable and reliable measure of an individual's level of occupational aspiration. It may be rapidly administered and objectively scored. The total score may be interpreted simply as a relative (but not absolute) indicator of the prestige level on the occupational hierarchy which an individual views as a goal. The OAS has reliability coefficients around 0.80. Its standard errors of measurement indicate that meaningful individual differences on LOA may be obtained by grouping the scores in high, medium, and low categories.

The OAS appears to have promising validity insofar as its validity has been estimated. Specifically, hypotheses about elevation of item means and factorial structure were found to be approximated by the OAS data. In addition, the total score of the OAS has a moderately high correlation with another LOA instrument known to have some predictive validity. Finally, the OAS tends to be correlated with variables with which a valid LOA measure should be correlated, and it tends to be uncorrelated with variables with which a valid LOA instrument should not be correlated, though the evidence here is not wholly conclusive.

Naturally, additional research is needed to improve the stability of the instrument and to gather broad normative data as an aid in interpreting individual scores. Above all, the predictive validity of the OAS has yet to be established.

In the meantime, it seems safe to suppose that the OAS will be useful as a research instrument for measuring the LOA's of adolescent males. Whether it can be used effectively at other ages or for girls is presently not known. We are conducting experiments

concerning its efficiency in predicting school dropouts at age 16, as well as withdrawals and performance in college. These experiments include girls. We are also experimenting with its use as a research tool among 5th to 8th grade boys and girls and among Japanese, Costa Rican, and Mexican-American youth. It is being used on an experimental basis by high school counselors, where we hope to learn whether it will help explain "under-achievement" and "over-achievement." Doubtless more will be known about the uses and limitations of the OAS when these studies have been completed. Meanwhile, some of the difficulties encountered in evaluating the OAS have suggested a few minor modifications of the instrument. These are currently being made.

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