LEVEL OF OCCUPATIONAL ASPIRATION: AN EMPIRICAL ANALYSIS¹

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Data from 34,118 American high school students were used to determine patterns of responses (factor structures, reliabilities, means, and standard deviations) to an indicator of level of occupational aspiration (LOA). Comparable analyses were performed on the total group and «sixteen mutually exclusive and exhaustive subsamples cross-classified by sex, lower and higher socioeconomic status (SES), and grade in high school (9-12). LOA appears to be a single-factor concept in the total sample and in each subsample. Contrary to previous thinking, no evidence was found of nontrivial response pattern variations in realism or idealism by grade. The only nontrivial sex differences in response patterns concerned the reliabilities, which were slightly lower for females than for males. SES differences were found only for means. Idealistic LOAs (so-called "aspirations") are as meaningful and as variable as realistic LOAs (so-called "expectations"). Both contribute to the same underlying psychological dimension, LOA. LOA response patterns are essentially the same for boys as for girls and for youth in all high school grades. By analogy, the analysis also elucidates certain parallel concepts: level of educational aspiration and significant others' levels of occupational and educational expectation.

Several recent publications (Sewell, et al., 1969; Sewell, et al., 1970; Haller and Portes, 1973; Sewell and Hauser, 1972) have demonstrated the key role in early adult occupational status attainment played by levels of occupational aspiration (LOA) formed by the time the youth is in high school. Specifically,

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we have found path coefficients describing the influence of 1957 LOA on 1964 occupational attainment of .14, .11, .10, .17, and .16 for young Wisconsin men from farms, villages, small cities, medium sized cities, and large cities, respectively (Sewell, et al., 1970). This effect is in addition to the substantial effect of education and other antecedent variables on occupational attainment. That this is not just happenstance due to the Wisconsin research site is attested by the fact that similar coefficients have been found to describe the relationship of adolescent LOA to adult occupational status attainments in at least two other data sets. In one of these a path coefficient of p = .13 was found (after controlling educational attainment) between the 1959 LOAs of Costa Rican high school boys and their 1968 occupational attainment levels (Hansen and Haller, 1973).

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In the other, a path coefficient of p = .174 (after controlling for the effects of years of college education, status of first job, and level of educational aspiration) was found, between 1957 LOAs of men from southern Michigan and the occupational prestige levels they had attained by 1972, when they were thirty-two years old (Carter, et al., 1973).

LOA thus has turned out to be an important antecedent variable in the occupational attainment process. Despite this, the concept has not yet received a full explication based on adequate data. Indeed there seem to be several widespread beliefs about it which are simply untrue. An empirical analysis of LOA is needed at this point as a prelude to the formulation of more precise theories of status attainment. In this paper we analyze the structure of LOA response patterns among high school students.

Such an analysis is needed, not only for LOA itself, but also to provide information about other variables in the status attainment process similar to it. Let us explain. LOA is a psychological variable because it is a part of a person's cognitive structure. It is a social psychological variable because it takes its hierarchical form from a social structural phenomenon, the occupational prestige hierarchy (Hodge, Siegel, and Rossi, 1966; Hodge, Treiman, and Rossi, 1966; Siegel, 1971). Yet, it is not the only psychological manifestation of this hierarchy which is important in the status attainment process. Other work (Woelfel and Haller, 1971; Haller and Woelfel, 1972) has shown that a person's "definers," (a class of his significant others) influence him by communicating to him the levels of the occupational hierarchy they deem appropriate for him. This variable is called the level of occupational expectation (LOX). The average LOX of one's significant others is substantially correlated with his LOA: r = +.76(Woelfel and Haller, 1971). LOX is a psychological variable for the same reason LOA is: it is a part of a person's (a significant other's) cognitive structure. It is a social psychological variable both because (like LOA) it takes its form from a social structural variable and because (unlike LOA) it describes a type of

other called level of educational expectation (LEX) which describes the level of the educational hierarchy one's educational definers deem appropriate for him. So what is learned about LOA will also help in understanding LOX, LEA, and LEX as well.

The formal structure of LOA has already been described elsewhere (Haller and Miller, 1971). A person's LOA is a limited range of points on the occupational prestige hierarchy which he views desirable or possible for himself; that is, it consists of his conception of a set of occupations within a limited level, is within the range of feasibility. (It is not at all necessary for any one particular person to conceive of these occupations as a part of a hierarchy, although most probably do. It is only necessary that objectively the occupations be so located in the social structure.) The area within the (rough) upper and lower "bounds" of a person's LOA is called the goal-region of the variable. These two bounds are called the *idealistic* and *realistic* levels. There is also a *temporal* aspect. In any behavior-sequence which occurs over long periods, a person may anticipate that one level will be appropriate for him at one time but that another will be appropriate at a different time. Occupational attainment is one such behavior-sequence. Thus, it is important to distinguish between long-range and shortrange LOA. From the youth's perspective, the former refers to mid-adulthood and the latter to the time he expects to enter the labor force on a full-time basis.

Over the years a series of questions has been raised about youths' responses to instruments designed to measure LOA. Stephenson (1957) recognized a difference between idealistic and realistic levels. The former he considered suspect. He thought all youth share the same high idealistic levels but that the realistic levels of youth vary by their socioeconomic origin (p. 211), although his own data (p. 208) show considerable variation in both. As Rehberg (1967) has noted, his argument almost exactly parallels one of Merton's (1968:229) to the effect that all people share

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instruments deserved in a localistic levels will not measure dictorrences in EOA that are present in the population. Europtically this predicts that idealistic levels will be found to have a low correlation with realistic levels. In factor analytic terms it predicts that idealistic items will have low foadings, while realistic items will have high loadings on a main LOA factor, and/or that idealistic and realistic items will constitute separate factors.

Sophisticated research statisticians, unfamiliar with the research in this area, might raise another objection to the idealistic aspect and possibly also to the long-range aspect: that these are meaningless to the individual. If this were the case both would display a great deal of interpersonal variation, as Stephenson's data (1957:Table 3, p. 208) on the idealistic aspect actually show. But idealistic and long-range aspirations would be unrelated to realistic LOA because, being meaningless, they would simply represent random measurement error, or unreliability. If this were the case, items tapping these two aspects would have little, if any, correlation with the factor or factors measured by the realistic and short-range aspect.

Both arguments are doubtful. In his research (Rehberg, 1967) appears to have found that idealistic levels of educational and occupational aspiration are both variable and meaningful, and that the idealistic levels of people are usually higher than their realistic levels. This result agrees with earlier findings. In previous research, using small samples of Michigan boys, Haller and Miller (1971) found that idealistic and realistic levels are correlated with each other despite the fact that the former are usually higher than the latter. So are the short- and long-range aspects. To date, factor analyses of these data have yielded just one large factor, LOA. It is troublesome, however, that the available analyses of the factor structure of appropriate multiple-item indicators of LOA are based only on undifferentiated samples of upper-working-class and middle-class youth and that these are small and unrepresentative (Westbrook, 1966; Haller and Miller, 1971:83-91). Such an instrument should be applied to youth of middle and lower socioeconomic status (SES) from a sample representative of the United States as a whole. It would be useful to do separate within-stratum analyses because middle and lower SES youth may respond quite

differently to idealistic and irealistice items. Working class wouth might (not imerely be lower on both than middle-class youth: the two strata might actually display different LOA factor structures From Stephenson (1957) onward it has been suspected that in lower SES strata the structure of LOA may not follow the single-factor pattern assumed by most status attainment research. This could occur if among those of lower SES the idealistic and/or long-range items 1) were not variable (as would be the case if the youth all sought the same high "success goal"), or 2) not reliable (presumably because the questions and response alternatives were meaningless).

At least two other nagging questions plague LOA research. One concerns variation by grade in school and the other is the question of appropriateness for females.

Long ago Ginzberg and his colleagues (1951) made their famous distinction between "fantasy" choices and "realistic" choices. While they did not spell out the hierarchical status implications of this, clearly they intended "fantasy" to include the idealistic levels (although they might also have labeled some unprestigious choices as "fantasy"). They argued that as the time of decision, usually high school graduation, drew closer, "fantasy" choices would tend to disappear and realistic choices would become much more frequent. The translation of this into LOA terms is clear: as students get older their idealistic LOAs would become less prominent, their realistic LOAs would become more prominent, and their overall LOAs would drop. If this were true, then at least three consequences would follow. First, the idealistic component in the factor structure of appropriate LOA instruments would decrease with age or grade in school; while the realistic component would increase. The same pattern would probably be observed for the longrange versus the short-range aspect. Second, the mean (\mathbf{X}) of a valid and reliable LOA instrument would decrease with age or grade (which in this case is the same thing). Finally, if the realism of students increased with age, the reliability of instruments to measure LOA should be higher among older youth. As yet there are no published data bearing on this question.

We are notoriously ignorant of the answers to many of the questions bearing on sex

influences, including those of discrimination, on occupational behaviors and orientations. LOA is no exception. The following questions are raised here. Can the LOAs of both males and females be determined reliably? Do the reliabilities differ by sex? Do items tapping the goal-region and temporal aspects of LOA show the same factor structure for males as for females? Do their idealistic and realistic LOA aspects differ? Do girls have lower or higher aspirations than boys? It is possible that a widespread belief that the occupational world is not really open to women might be reflected in an LOA variable which is differently or more weakly structured for females than for males. If this were true, any number of sex differences might arise. Specifically, their LOA reliabilities might be lower. This might also be true of their mean LOAs as measured by a valid and reliable instrument.

METHOD

Data for these analyses were collected in 1961 from thirty-one schools in cities in all regions of the United States.² In all, complete data are available on 34,118 males and females in grades 9 through 12. About 5,000 cases (or 13 percent) of an original 39,161 were dropped because of missing data. The following items are available: 1) grade in school (9, 10, 11, and 12; also called freshmen, sophomores, juniors, and seniors, respectively); 2) sex; 3) the respondent's father's socioeconomic index (SEI) score (Duncan, 1961), a measure of the family's socioeconomic status (SES); and 4) the youth's response to each item of the Occupational Aspiration Scale (OAS) (Haller and Miller, 1971). Of these the OAS is the only one

² The following cities and states were included:

Birmingham, Alabama Tucson, Arizona Azusa, California Bellflower, California Sacramento, California Fairfield, Connecticut Des Plaines, Illinois Hagerstown, Maryland Royal Oak, Michigan Kennett, Missouri St. Louis, Missouri Columbus, Nebraska Hanover, New Jersey Katonah, New York Syosset, Long Island, New York

Newtonville, New York Schenectady, New York Charlotte, North Carolina Mandan, North Dakota Canton, Ohio Kettering, Ohio Oklahoma City, Oklahoma Portland, Oregon Greensburg, Pennsylvania Columbia, South Carolina San Angelo, Texas Middlebury, Vermont Hampton, Virginia Longview, Washington Seattle, Washington Brookfield, Wisconsin

which is at all unfamiliar. In brief, it consists of eight items, each consisting of a stimulus question and a set of response alternatives. The eight stimulus questions are worded so that among them they tap each of the four possible combinations of individual goal-levels and career points: the realistic short-range (the occupation "you are really sure you can get when your schooling is over"), realistic long-range (the occupation "you are really sure you can have by the time you are 30 years old"), idealistic short-range (the occupation "you would choose if you were free to choose any of them you wished when your schooling is over"), and idealistic long-range ("you would choose to have when you are 30 years old if you were free to have any you wished"). Each of these is presented twice. There are ten rank-ordered response alternatives for each question (scrambled on the form to reduce the "desirability effect"). The respondent chooses only one from each set of ten. The eighty response alternatives (ten for each of the eight items) are occupational titles taken from the ninety included in the early NORC studies of occupational prestige (Hodge, Siegel, and Rossi, 1966). They are grouped so that the occupational response alternatives to each stimulus question substantially span the entire prestige range. Each occupation is used only once. A person may score anywhere from zero to nine in answer to each stimulus question. One's total score is the sum of his or her eight item scores. Possible totals thus range from zero (zero points on each of the eight items) to seventytwo (nine points on each of the eight items). For the present total sample, the mean is 42.85 and the standard deviation is 10.75.

Sixteen subsamples were formed by crossclassifying males and females by higher SES $(\overline{X} \text{ SEI} = 66.08)$ or "white-collar class" and lower SES (\overline{X} SEI = 25.54) or "blue-collar class" using SEI = 46 as the cutting point, and by high school grade (nine, ten, eleven, and twelve). These subsamples ranged in size from a low of 1,352 (low SES freshman boys) to a high of 2,521 (low SES sophomore boys). (Freshmen, or ninth graders, are underrepresented because not all sample schools included the ninth grade.) For each of these subsamples and for the total group the following were calculated: 1) the correlations among all eight LOA items; 2) the mean of each item; 3) the standard deviation of each item; 4) a factor

and was were quartimax orthogonal rotations (Noninaus and Wrigley, 1954) and oblique relations (Harris and Kaiser, 1964) (independenf cluster procedure); and 5) an estimate of ine ioial OAS reliability, r_{kk} (Nunnally, 1967-193), which is Cronbach's (1951) alpha (Bohrnstedt, 1970:89). The variance accounted for by each orthogonal factor and the correlations between the oblique factors were also calculated. Communalities were estimated by a squared multiple correlation method proposed by Guttman (1954). The general form of the analyses is illustrated in Table 1. Analyses identical to this were performed on each of the sixteen subsamples. Tabular evidence is presented herein only for the total data set, although conclusions specific to subsamples are presented in the text. (For the complete set of tables, see Otto, et al., 1973.)

Tests of significance were not used. The subsample sizes are so large that almost any difference would be adjudged "significant," regardless of how trivial it was. Besides, the sample was not drawn randomly. Despite the latter fact, the data are adequate for the purpose of comparing response patterns of subsamples. The categories that generate the sixteen subsets are among those which are of almost universal sociological significance: sex, age, and socioeconomic status. If the differences among these are trivial, one can be fairly certain the same would be true for other samples in the same age and socioeconomic status levels. The same would hold if systematic nontrivial differences by sex, by age, or by socioeconomic status are found. If, on the other hand, large nonsystematic differences were to appear it would be impossible to draw any inferences; in this case the safest conclusion would be that the data are untrustworthy. In the present data, most differences were trivial; the others were systematic.

RESULTS

Factor structure. The first question concerns the factor structure of the idealistic and realistic short- and long-range items purporting to measure LOA. Table 1 presents an overview of the necessary data. Except as noted, our comments about the pooled sample also apply to each of the subsamples. As in the total sample, each item in each subsample is highly saturated with a general factor. The common factor variance measured by this first factor, as calculated by a quartimax rotation, ranges from a low of 68 percent among low

	Item Correlations										Rotated Factor Weights				
	RS1	151	RS₂	IS2	RL1	IL,	RL 2	IL 2	x	σ	Quartimax Factors			Oblique Factors	
											I	11	III	I II	
RS1	(27)								4.07	2.04	47	21	-02	51 40	
ISı	17	(19)							6.42	2.65	40	- 14	+05	33 42	
RS 2	40	22	(42)						3.55	2.41	61	21	-01	65 53	
IS2	25	27	33	(33)					5.69	2.13	60	-12	.00	50 57	
RL1	27	15	35	27	(28)				5.04	2.21	50	13	05	52 45	
ILı	15	17	19	29	21	(20)			6.55	1.89	41	-15	03	34 43 1.00 (approx	
RL 2	27	21	41	29	34	22	(33)		4.98	2.73	56	12	03	57 51	
IL ₂	19	27	29	32	23	25	28	(28)	6.54	1.99	51	-15	-02	44 53 TI 11=:829	
Perc	ent l	Factor	r Vari	Lance						<u>सः सः</u> १९२१ म् १९२१ - २४	91 91	9	Lins (0 Nats 1 Nats 1	hite addition and hite addition and hit addition addition hit addition	
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Table 1. Total Sample (N = 34,118)

SES female seniors, to a high of 91 percent for low SES female freshmen. (It is also 91 percent in the total sample; see Table 1.) On the other hand, the second factor is always small. Its highest level is 30 percent for low status senior females, and its lowest is 7 percent among high status senior females. In all subsamples besides the low status senior females (an unusual case) the minimum percentage of common variance accounted for by Factor I is at least 83 percent. Also among these, Factor II does not exceed 13 percent. Factor III, never more than 6 percent (zero in Table 1), is uniformly too weak to merit discussion. An examination of the means and standard deviations shows-consistent with Stephenson's data but not with his verbal report of it-that there is considerable variability not only in students' responses to realistic items but also to idealistic items. But do these load on the general LOA factor? The answer is yes, as an examination of the item weights on quartimax Factor I indicates. Factor I is thus a general LOA factor which almost completely saturates the common factor variance, and both idealistic and realistic items contribute to it. It follows that the idealistic aspect of LOA is neither invariant as the Stephenson argument would hold, nor meaningless as a more sophisticated statistical argument might hold. The same holds for the long-range aspect. All items whether realistic or idealistic, short-range or long-range are contributors to the same larger dimension: LOA.

The main difference between idealistic LOA and realistic LOA is that idealistic levels are higher—as they should be. A simple calculation can tell just how much higher they are. The sum of the means for the realistic items (RS₁, RS₂, RL₁, and RL₂) in the Table is R = 17.64. For the comparable idealistic levels (IS₁, IS₂, IL₁, and IL₂) the sum is $I = 25.20.^3$ The difference is 7.56. On the average, youths' answers to idealistic questions are just about 50 percent higher than their responses to realistic items. This is an important quantitative difference. But since the

³These terms are defined as follows: R and I mean realistic and idealistic goal regions; L and S mean long-range and short-range time perspectives; 1 and 2 indicate the order of presentation to the student, 1 being first and 2 second. Thus, for example, RS₂ means the second presentation of the realistic short-range stimulus question.

idealistic items load on the same general LOA factor as the realistic items, their inclusion in LOA instruments simply increases scale reliability.

To learn whether there is any empirical basis at all for the belief that idealistic and realistic levels differ qualitatively, the loadings in Factor II were examined. This factor is small but perhaps not totally meaningless. The weights are usually positive for realistic items and negative for idealistic items. This result shows that there is indeed a (very small) bipolar realistic-idealistic factor tapped by all items, which might be interpreted as unrelated to the main LOA factor. Oblique rotations (Harris and Kaiser, 1964) to approximate simple structure (shown in the last two columns in the table) were calculated on the assumption that rotating to such a solution might provide additional interpretative information. Indeed it does. A careful inspection of the weights of the obliquely rotated factors and the correlations between them shows that it is possible to interpret LOA as a pair of highly correlated factors. This holds in each of the sixteen subsamples, and of course in the total group (Table 1). In the sixteen subsamples, the between-factor correlations are uniformly high, ranging only from r = +.753 to r = +.837. In the total sample, r = .829. These results reinforce the previous conclusion that all sets of items, idealistic and realistic, shortrange and long-range, measure general LOAthe factor that accounts for the high correlation between the two oblique factors. Besides this, the separate interpretations of the two factors are not clear: none of the factor weights closely approaches zero, which occurs when "simple structure" has been truly approximated. They are both too weakly defined to merit much attention. One we take to be a realistic-idealistic factor, where realism has the highest positive loadings. The othersomewhat more prominent among females than among males-seems to reflect the order of presentation of the stimulus questions in the OAS. It can now be seen that, slight though it is, a small empirical basis does exist for the perceptive social scientist's observation of a qualitative difference between realistic and idealistic aspirations. But though these factors (only one of which, realism-idealism, could possibly have any theoretical significance) are barely identifiable, they are so

weakly defined and so highly correlated that they simply reinforce the conclusion that all aspects of LOA-realistic and idealistic, shortrange and long-range-are overwhelmingly saturated with general LOA. This applies to both sexes in all combinations of sex, status, and grade in school.

Variations by grade. The second question addressed here is that of possible variations in LOA patterns by grade in school. Here we seek to learn whether there are systematic variations from grades 9 to 12 in: 1) factor patterns; 2) idealistic, realistic, short-range, and long-range item score and total score standard deviations; 3) the reliability, or meaningfulness of LOA items; and 4) the means of the items and total scores. The basic strategy was to examine the grade-related trends of a statistic (say, the mean) within each joint sex-SES category. If one can deduce from the Ginzberg, et al., (1951) position that levels of occupational aspiration become more "realistic" as students progress through high school, then: 1) the loadings of the first quartimax idealistic and long-range items should decrease while those of realistic and short-range should increase; 2) the idealistic long-range and total score standard deviations should decrease; 3) the reliability coefficients should increase; and 4) the total score means should become lower.

Special tables, not presented here, were set up to examine these hypotheses. The examination shows: 1) that there is no grade trend whatsoever in loadings of each item on the LOA factor (the first quartimax factor); 2) there is occasional evidence of a small and inconsequential grade-related decrease in idealistic long-range item standard deviations and in total score standard deviations; 3) there is no grade-related trend whatsoever in the reliability coefficients; and 4) there is no grade-related trend in the total score means. To be succinct, none of these predictions hold with force enough to be taken seriously. Students from the lower grades in high school were neither more nor less realistic than those in the higher grades.

Variations by sex. The third question concerns variations by sex. As above, the data for the sixteen subsamples were recompiled to explore sex differences. The strategy here was

to compare sex differences regarding a given statistic (say, the mean) within each of the eight joint categories of grade and SES. The data show the following: 1) sex differences in factor patterns are inconsequential, as has already been noted; 2) sex differences in the means of the total scores are systematic but negligible: at each level of grade and status, females are about one or two points lower than males (Grand mean = 42.85; see Table 1); 3) sex differences in standard deviations are likewise systematic but inconsequential: at all levels of grade and status, LOAs of males are slightly more variable (about 1/10-1/5 of a standard deviation) than are LOAs of females; 4) at all levels of grade and status, the OAS scale scores are slightly more reliable for males than for females. Females' reliabilities vary from $r_{kk} = .66$ to $r_{kk} = .70$, while those of males vary from $r_{kk} = .73$ to $r_{kk} = .78$. Thus the LOAs of males and females do not differ in any important way, except that the total LOA scores are slightly less reliable for females than for males. This may mean that LOA is a slightly less meaningful variable among females than among males, or it could mean that the OAS, this particular instrument, is not quite as reliable for females. In any case the overall implication is that the LOA variable operates about the same among females as among males.

CONCLUSION

Present data allow for the identification of minute differences in LOA by grade, sex, and social status. Nonetheless their main message is simple. LOA is a general dimension composed of idealistic-realistic goal-region aspects and of short- and long-term temporal aspects. Measures of each of these aspects contribute strongly to the measurement of the overall dimension. High school students' average levels of occupational aspiration do not differ notably by grade or sex. Neither do the component aspects of LOA. The only sexrelated difference occurs in the reliabilities. This result may mean that LOA may be just slightly more meaningful among males. The effects of socioeconomic status on LOA are well known (Sewell, et al., 1957); so their relationship has not been discussed here, although the data clearly confirm the usual

finding that the LOA of lower SES youth is systematically lower than that of higher SES youth, regardless of sex or grade. Status does not notably affect factor structure, standard deviations or reliabilities.

A few cautionary remarks may be in order. The present conclusions do not necessarily apply to youth from the very highest and the very lowest strata of society. It is unlikely that our white-collar group included many children of the elite. Similarly few from the blue-collar group probably came from families in dire poverty; these youths were neither from rural areas nor from the urban ghettos. Nonetheless, we know of no compelling reason to suggest that the LOA structure of such youths would differ especially from that determined herein. Age is another matter. Surely the LOA structure of very young children must be less well formulated than that of high school youth. It would be illuminating to extend the present type of analysis to junior high school and grade school youth.

In short, general LOA is an important social psychological construct among high school students. The parts of which it is composed are important not as special variables but as contributors to general LOA. Its grade and sex variations are of little consequence (although mean LOA variations by social status are of some importance). A number of recent research publications have used LOA fruitfully (e.g. Sewell, et al., 1969; Sewell, et al., 1970; Duncan, et al., 1968). We hope that the present analysis may encourage other researchers to examine the antecedents and consequences of variations in LOA, and to continue to extend its logic into related areas such as the educational aspirations of youth and the occupational and educational expectations of those who influence them.

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