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AD NUMBER: AD0099398

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Technical Report
Need Analysis Research Project #NR 172-363
Contract #N7 onr 463
D. C. McClelland, Chief Investigator

June, 1956

INTEREST IN RISKY OCCUPATIONS AMONG SUBJECTS WITH
HIGH ACHIEVEMENT MOTIVATION*

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Since subjects with high n Achievement by definition think a good deal about doing things well (6, p. 118) and by empirical finding do perform better and learn faster under certain conditions (6, p.231), it would be logical to assume that as a group in society they would tend to innovate, to keep things moving, in short to play the role of entrepreneurs. More specifically, some evidence has been presented elsewhere (5) which suggests a link between high n Achievement and the growth of business enterprise in the West, particularly in those circles strongly influenced by the Protestant Ethic. The case for such a relationship is, however, still rather indirect. A connection has been demonstrated between Protestantism and economic development and also between Protestantism, early independence training, and high n Achievement. The link between high n Achievement and economic development remains to be established. A natural hypothesis would be that high n Achievement somehow predisposes individuals to enter certain entrepreneurial occupations which are essential to economic development, at least in an open society. An alternative hypothesis would be that

* I am indebted to the Office of Naval Research and to the Ford Foundation for financial aid in support of this research and to Dr. Hans-Werner Wendt, Messrs, S.T.H. Amdur, Elliot Aronson, Joseph Sturr, and Edward Parmee for assistance in collecting and analyzing the data.

high n Achievement predisposes individuals to do well at all occupations and that it tends to produce economic development because it leads more individuals to be good entrepreneurs, just as it also leads more to be good artists, poets, or lawyers.

One rather simple method of attacking this problem empirically is to tabulate the occupational preferences of subjects with high and low n Achievement. The question is whether the "highs" would prefer all achievement-related occupations more than the "lows" or just a limited number related specifically to business enterprise. For such relationships to be of importance, if discovered, occupational preference must determine to some extent what occupation a person actually chooses, and furthermore, preference must somehow be related to excellence of performance in the occupation once entered, but both of these assumptions seem to be somewhat supported by research on vocational interest tests (7), and, in any case, they can be checked directly once the influence of n Achievement on occupational preferences has been discovered.

As reported elsewhere (5), a preliminary check of the likes and dislikes of subjects with high and low n Achievement for the various occupations listed as the first hundred items in the Strong Vocational Interest Blank revealed that the "highs" preferred significantly more than the "lows" the following occupations: stockbroker, office manager, sales manager, buyer of merchandise, real estate salesmen, and factory manager. These results lend support to the hypothesis that there is a connection between high n Achievement and interest in business enterprise, but they are hardly definitive. In the first place they represent about the number of significant differences that one would have expected by chance in making 100 tests, and in the second, they do not shed any very precise light on just what characteristics of which occupations lead subjects with high n Achieve-

ment to prefer them. It is the purpose of the present report to extend the study of occupational preferences to other widely diverse groups and to subject the preferences to the kind of analytical treatment which may reveal why they exist in the first place.

Procedure

The frequency of "Like", "Indifferent", and "Dislike" responses to various items on the Strong Vocational Interest Blank was tallied for groups of subjects with high and low n Achievement scores obtained in the standard manner from content analysis of stories written to various slides (6). The "high" and "low" groups were made up of subjects in the top and bottom 20% of the n Achievement score distribution for three groups of entering Wesleyan freshmen tested, and the top and bottom 50% of the scores in the other three groups tested. It was necessary to shift to 50% in the other groups in order to get a large enough number of subjects to provide stable preferences for the groups. Mean favorableness scores were computed for each item for the high and low groups separately, by assigning 2 for an answer of "Like", 1 for an answer of "Indifferent", and 0 for an answer of "Dislike". The difference between the mean favorableness scores of the "highs" and the "lows" was then computed and used in the subsequent analysis. If it was positive, it meant that the "highs" had a higher mean favorableness score than the "lows", and if negative, the reverse. These "difference scores" are small in absolute size since the range of favorableness scores is only 0-2 and the means fall well within that range, but the differences are stable since fairly large numbers of cases go into establishing the means on which they are based. (See Table 1.)

Items were chosen for analysis in three different ways. (1) Those items

which were preferred significantly more often by the "high" than the "low" in the original exploratory analysis of all 100 occupational titles listed in the first section of the Strong Blank were selected out for further cross-validation. A somewhat different criterion was ultimately adopted for selecting those items that was used in the preliminary report of the results of this experiment (5). The test of significance used was a Chi-square based on the differences in the frequencies of the "high" and "low" groups in choosing the L I D alternatives to the item. A significant Chi-square could be obtained because of differences that were concentrated heavily in any one of these alternatives. In the original report of the results those Chi-squares whose significance depended heavily on differences in the "Indifferent" category were eliminated and subsequently it was decided to eliminate also those whose significance depended largely on the differences in the "Dislike" category. Thus, finally all these items were included which the "high" definitely liked more (Chi-square at or near .05), when the "I" and "D" responses were lumped together so as to make a 2 x 2 table. This eliminated cases in which the size of the Chi-square depended largely on greater indifference or less dislike among the "highs". By this criterion two occupations previously listed dropped out, e.g., office manager and sales manager, and a new one, advertiser ($\chi^2 = 3.88$) met the criterion. Four of the original six--stockbroker, ($\chi^2 = 8.23$), real estate salesman ($\chi^2 = 3.98$), factory manager ($\chi^2 = 3.74$), and buyer of merchandise ($\chi^2 = 3.74$) were retained. These items will be referred to as the "entrepreneurial role" items for reasons that will be made clear later.

(2) Analysis of the role of the entrepreneur in society suggested that he was interested in or challenged by risk-taking enterprises or occupations. It was therefore decided to have 20 college student judges sort some 67 widely dif-

fering occupations, the names of which were typed on cards, into either a "risky" or "non-risky" category. The instructions explained that by "risk" was meant not simple luck (as in the Irish Sweepstakes), but "the extent to which the success or failure of the enterprise depends on the skill of the person who is taking the risk". They were further asked to disregard whether they personally would like the occupation or not but were simply to judge objectively the extent to which it involved risk in the sense meant here. After they had finished, they were asked to go back and further sort the occupations they had placed in the risky category into "1) those involving mainly physical risk, 2) those involving mainly financial risk, and 3) those involving clearly some kind of recognized risk that does not fit into either the physical or the financial risk categories." As a result of this analysis 11 occupations were found which were judged by a significant number of the judges (at least 15 out of 20) to be risky, 3 of which they classified in the physical risk category, 5 in the financial risk category, and the remaining 3 in the "other" category which we labeled "ego-risk" (see Table 1). Furthermore, a number of occupations were discovered which were judged by the same criterion to be non-risky, safe, or secure. Unfortunately most of these had much lower mean favorableness scores than the risky items had, and since it was subsequently discovered that general favorableness toward the item markedly influenced the results, only the three items in this group with the highest mean favorableness scores were included in the final analysis. They are athletic director, clergyman, and interpreter (see Table 1).

(3) It became apparent in the course of the analysis that a group of "control" items was needed. Originally it had been thought that there should be no difference in favorableness of the high and low n Achievement groups for a random selection of occupations and that, therefore, any mean differences obtained for a given group of items could be tested for the significance of its deviation

from zero. However, a slight though insignificant tendency for the high η Achievement group to like all items more appeared in the data and it became necessary to form a group of control items against which the "risky" and "entrepreneurial role" items most liked could be compared. The final group of five items chosen (see Table 1) included the three "secure" occupations obtained in judging which occupations students considered risky and two items (lawyer and poet) which were preferred more by the subjects with low η Achievement in the original exploratory study. Two further criteria were used in selecting these items and excluding certain others: namely, they had to be roughly equivalent in popularity to the "risky" and "entrepreneurial" occupations and they had to be unrelated in any obvious way to business or science or any other such occupations which have been theoretically connected with economic development and the Protestant Ethic (4, 5).

Six groups of subjects were tested. Groups 1, 2, and 3 were three classes of Wesleyan freshmen who took both the Strong Vocational Interest Test and the η Achievement test at entrance in September of 1951, 1954, and 1955; Group 4 consisted of 86 students ^{aged 16-20} from an Altsprachliches and a Neusprachliches Gymnasium in Mainz, Germany, who took both tests in German; Group 5 consisted of 70 American ^{Senior} students drawn from a college preparatory high school in Utica, New York, and a private New England boys' preparatory school; Group 6 consisted of 72 life insurance salesmen ^{aged 21-44} attending a school for the Aetna Life Insurance Company in Hartford, Connecticut. These groups were chosen for study in a random way, largely because data were available on at least some of the items from each of them. Obviously they do not represent a systematic sample of various population sub-groups. All the subjects were male and all of at least middle or upper class status. Otherwise they varied widely as to age, occupation, and na-

tionality. They also were tested for n Achievement in various ways. The most reliable n Achievement scores were obtained for Group 1 on which the original exploratory study was done, both because the scoring was checked and re-checked on this group and because each individual's score was based on eight stories instead of four as in the other groups. In Groups 2 and 3 the n Achievement scores showed a larger than normal piling up at the low end of the scale because in Group 2 verbal instead of picture cues were used and in Group 3 pictures yielding low percentages of achievement imagery were tried out. The result in both cases was some loss in sensitivity of the n Achievement score to individual differences. The pictures used for Groups 4 and 5 were different from the cues used for Groups 1, 2, 3, and also from the pictures used in Group 6. Strong tests were available for Groups 1, 2, 3, and 6 (for the most part) but only selected items included in a questionnaire for Groups 4 and 5. This degree of variability is highly undesirable and resulted from the fact that each of the groups were tested with other objectives than those of this study in mind. Nevertheless such variability as to method of testing and type of subjects can only work to attenuate differences and if any are found, they must be regarded as reflecting tendencies important enough to override such methodological inadequacies.

(Insert Table 1 here or near here.)

Results

Table 1 shows what items were used, how they were classified, and for which groups the results on a particular item were available. It also gives the mean favorableness score for each item for each group of subjects, a matter which turned out to be of considerable significance. It had originally been anticipated that at least the three Wesleyan groups would be substantially replications

Table 1

Mean Favorableness Scores from Various Groups for Items from the Strong Vocational Interest Blank Listed by Name and Number. (* items favored significantly more by Ss with high n Achievement in Group 1.) Like = 2, Indifferent = 1, Dislike = 0.

Subject Group	1	2	3	4	5	6	Strong's Norms for Men in General
	Wesleyan Freshmen Class '55	Wesleyan Freshmen Class '58	Wesleyan Freshmen Class '59	German Hochschule	U.S. Secondary School	Aetna Life Sales Trainees	
Total number of subjects	84	90	80	86	70	72	
Control items							
51. Lawyer (criminal)	1.37	1.27	1.45	.95	1.43		.75
71. Poet	.97	.65	1.13	.69	.49		.64
25. Civil Service employee	.65	.81	.90	.91			.55
7. Athletic director	1.27	.93	1.44			1.62	.93
26. Clergyman	.75	.84	.58			1.21	.57
44. Interpreter	.95	.83	.93			.97	.66
Physical risk							
12. Auto racer	.85	.91	.94			.73	.49
34. Explorer	1.45	1.50	1.52			1.59	1.31
86. Secret service man	1.44	1.32	1.47			1.55	.75
"Ego" risk							
48. Labor arbitrator	.93	.96	1.04			1.49	.72
72. Politician	1.15	1.09	1.33			1.29	.64
83. Scientific research worker	1.24	1.33	1.33			.59	1.19
Financial risk							
17. Building contractor	.95	1.00	1.24			1.48	1.10
45. Inventor	1.42	1.39	1.53			1.22	1.28
*18. Buyer of merchandise	.92	.92	1.03	.53	.97	1.66	1.07
*77. Real estate salesman	.73	.75	1.02	.28	.79	1.74	.61
*92. Stockbroker	.84	.93	1.13	.39	1.67	1.64	.77
Other business occupations							
* 2. Advertiser	1.78	1.57	1.24	1.05	1.28	1.80	1.04
*35. Factory manager	.93	.88	1.12	1.24	1.13	1.42	1.16
Mean of all items	1.08	1.05	1.18	.76	1.11	1.38	

of each other, but this turned out not to be the case. Group 3 is more favorable toward 16 out of 19 items ($\chi^2 = 8.89, p < .01$) than either Groups 1 or 2. Group 6 (the salesmen) is the most favorable of all toward most items and is actually higher on 12 out of 16 items than Group 3 ($\chi^2 = 4.00, p < .05$). The Germans are least favorable of all. Also, there are large shifts for individual items from one group to another, many of which are beyond the .25 to .30 values usually significant at the .05 level in this Table. No group can be considered a replication of any other so far as favorableness is concerned except possibly Groups 1 and 2.

To handle this problem in a crude way, it was decided to classify the results into two categories: those in which the mean favorableness of the total group toward the item was above the median for the groups tested, and those for which it was below the median. For example, for item #2, advertiser, the mean favorableness scores for Groups 3, 4, and 5 (1.24, 1.05, and 1.28 respectively) were all below the median favorableness toward this item for the six groups on which we have data whereas the mean scores for the remaining three groups (1.78, 1.57, and 1.80) were above the median favorableness for this particular item. The only problems arose for the first two control items (lawyer and poet) for which there were an odd number of groups. Here it was decided arbitrarily to classify Groups 2 and 4 for lawyer and Groups 2, 4, and 5 for poet as below the median in each case to keep the number/above and below the median for the control items equal.

The next step involved computing a mean favorableness score for each item for each group for the half of the subjects who were high in n Achievement and another one for the other half of the subjects who were low in n Achievement. The differences between these two scores represents the extent to which the "highs"

are more favorable toward the item than the "lows". The means of these difference scores for types of items and level of over-all favorableness are presented in Table 2. Since the derivation of the scores in this Table is a little complicated, it may be well to explain in detail how a particular one was arrived at. For the 6 control items in Table 1 there are 26 possible comparisons of the mean favorableness scores of the high and low \bar{A} Achievement groups. Thirteen of these comparisons are instances in which the mean favorableness toward the item are below its median among the groups compared and 13 in which it is above its median. For the 13 instances in which the item is relatively unpopular (below its median in favorableness), the average difference between the mean favorableness of subjects with high \bar{A} Achievement and those with low \bar{A} Achievement is .034, S.D. = .09. What the Table shows is that the mean difference score is significantly higher for the "financial risk" items than for the control items when general favorableness toward both types of items is low. Contrariwise, the mean difference score is higher for the "ego and physical risk" items combined than for the comparable control items, provided the general favorableness toward both types of items is high. There is also a significant tendency for the "financial risk" items to be more favored by the subjects with high \bar{A} Achievement regardless of the popularity standing of the items, but it is obvious that the popularity factor is of key importance to judge by the fact that the subjects with high \bar{A} Achievement prefer the financial risk items nearly significantly more ($t = 1.86$, $p < .10$) when they are generally unpopular than when they are popular. The "mean" difference score for the control items does not differ significantly from zero arguing that the "highs" do not prefer any and all items.

As explained above, an empirical method was also used for selecting items which should be tested for association with \bar{A} Achievement. It produced the five starred items at the bottom of Table 1 which showed significant Chi-squares be-

occupations more.

Table 2

Differences in Mean Favorableness Scores Toward Groups of Items
Between Subjects with High and Low n Achievement Classified
According to Whether the Favorableness Toward the Item is
Above or Below the Median for the Groups Compared.

Types of items	Mean favorable- ness score	Mean preference scores of "high" minus means of "low"								For all items		
		Below median in favorableness			Above median in favorableness			diff.	t	N#	M	SD
		N#	M	SD	N#	M	SD					
Control (C)	1.00	13	.034	.09	13	-.010	.13			26	.012	.15
Ego and physi- cal risk (E)	1.21	12	.015	.19	12	.141	.13	.126	1.89	24	.077	.17
Financial risk (F)	1.06	13	.188	.20	13	.056	.11	.132	1.86	26	.122	.19
Diff E - C						.151						
t						2.40*						
Diff F - C			.154								.110	
t			2.41*								2.29*	

* $p < .05$

N is the total number of comparisons of items in the category in different groups (see Table 1).

tween the "highs" and "lows" in Group 1, on which the best n Achievement scores were available. Since three of these items were independently judged to involve financial risk, the mean difference scores for these five items behaved very much like the financial risk items in Table 2. When the general favorableness toward these five items is low, the mean favorableness of the subjects with high n Achievement is .22 higher on the average than the mean favorableness of the subjects with low n Achievement, a difference which is significantly larger than the .034 difference obtained for comparable control items ($t = 3.60$, $p < .01$). When the general favorableness toward these items is high, the difference drops to .07 which is not significantly larger than for the control items. In general this particular group of items seems to differ more significantly from the control group ($.22 - .034 = .176$, $t = 3.60$) than the financial risk items do ($.188 - .034 = .154$, $t = 2.41$) largely because the two financial risk items omitted (building contractor and inventor) are not favored as consistently by the high n Achievement group as are either the remaining three "financial risk" items or the two additional business occupations selected out by the empirical method. However, it may be objected that the significance of the difference is illegitimately increased by including the differences from Group 1 since the items were chosen specifically to maximize such differences in that group. It is true that a further classification was imposed into popular and unpopular items, but on this basis only one of the five starred items fell into the popular category for Group 1. For this reason it was decided to drop out Group 1, using it solely as a method of formulating empirically the hypotheses as to which items should be related to n Achievement in subsequent cross-validating tests. When this is done, it makes it somewhat difficult to split the five groups evenly into equal numbers of "popular" and "unpopular" items but it was done by ranking the items in

order of popularity and splitting them either between the second and third rank or the third and fourth, depending on which of the two differences was larger. The resultant difference score in favor of the high n Achievement group for the less popular items dropped from .22 to .133, a value which is, however, still significantly larger than the control value of .034 ($t = 1.94$, $p < .03$, one-tailed test). As before, the difference in favor of the high n Achievement group for the same items when relatively popular is small (.06) and insignificantly larger than the comparable control value.

It is of some interest to note that all five of the starred or "entrepreneurial role" items contribute positively to the combined mean difference score. The average amount by which the high n Achievement group exceeded in favorableness the mean of the low n Achievement group for each item is as follows

(when general favorableness is low): stockbroker = .31%, real estate salesman = .24%, buyer of merchandise = .22%, factory manager = .18%, and advertiser = .11%.
($t = 2.94$, $p < .01$)
($t = 2.93$, $p < .01$) ($t = 2.26$, $p < .05$) ($t = 1.88$, $p < .10$) ($t = 1.03$, $p < .30$)

The comparable values when favorableness is high are: .12, .003, .03, .04, .18.

It is unfortunately impossible to test the significance^{properly} of the mean difference score for any group of items across groups of subjects because the popularity factor cannot be taken into account. For example, it is of special interest to note whether differences obtained originally on a group of American college freshmen would also hold up in another culture for a group of German students of approximately the same age. As a matter of fact, they do. The mean favorableness score for the German subjects with high n Achievement toward the five "entrepreneurial role" items is .17 higher than the mean favorableness score of the German subjects with low n Achievement ($t = 2.12$, $p < .05$), a value which is actually the second highest in the six groups tested (surpassed only by the initial group where the items were chosen to maximize such differences). Yet the test of

significance of this difference is hard to interpret unambiguously because the German group also is significantly lower in favorability toward these items than the American groups are. In fact, as might be predicted on the basis of the results in Table 2, the rank order correlation is $-.77$ between the size of the mean difference score for the five items for a group and the general favorableness toward those items in that group. In other words, the more favorable the group is toward the items, the less the "highs" favor the items over the "lows". Still if one wants to regard the low valuation by the Germans of these occupations as typical of their country rather than as a "low" case from a series of such samples as in the U.S., then it would be legitimate to conclude that in Germany (as in the U.S. when popularity is low) subjects with high \bar{n} Achievement like the "entrepreneurial role" items significantly more than subjects with low \bar{n} Achievement.

Another statistic of some interest might be the correlation between an individual's \bar{n} Achievement score and his combined score on various types of risk and non-risk items within a given group of subjects. As a matter of fact, such correlations were computed by counting the number of "Likes" the subject had marked for all the risk items and subtracting the number of "Likes" he checked for ten control items (including the three "secure" occupations in Table 2 and seven others also judged secure but liked somewhat less). In the Aetna sales group the correlation between \bar{n} Achievement score and preference for risky occupations calculated this way was $.27$, $p < .05$. In the Wesleyan Class of '59 it was $.16$ ($N = 185$, $p < .05$) and also in a random sample of the Class of '55 it was $.16$. Obviously the relationship is so small that although significant it is of very little general importance or use. It could be increased by taking the popularity of the risk item into account before deciding to score it posi-

tively or not, but such a procedure would be exceedingly laborious since the "popularity norms" would necessarily be different for each item and ought to be based on a large number of different samples of subjects. That is, each time the test was administered, the favorability score for each item in the key would have to be determined before it could be decided whether it was to be included in the total score or not. Consequently any attempt to derive a score from the Strong Vocational Interest Test which would be a reasonably good "machine scored" substitute for the n Achievement score would probably be more trouble than to obtain the n Achievement score itself in the usual way.

A final matter of interest has to do with the mean scores of subjects with high and low n Achievement on the 44 Strong Vocational Scales for the entire Interest Blank. These were computed for the Wesleyan Class of 1955 and 11 occupations were selected for which the *t* value of the difference between the means of the "highs" and the "lows" was greater than 1. These 11 occupations were checked again for the Class of '59 and out of them all only two approached significance on both tests. These were the Farmer scale and the Vocational Agricultural Teacher scale, both tapping somewhat the same items. No particular significance is attached to this result partly because it might have arisen by chance and partly because the chance score on the Strong Blank tends to be high on the Farmer scale. Of more importance is the fact that several of the occupational interest scales such as Real Estate Salesman and Production Manager which might be supposed to be related to n Achievement on the basis of item differences did not show any such relationship for the total scales.

Discussion

There is no evidence in the data to support the hypothesis that subjects with high n Achievement will tend to like better all popular or prestigious occupations. The first point against this hypothesis is that the control items show no relationship to n Achievement score. It may be objected that these occupations are too miscellaneous and do not represent occupations considered by people in general to represent high achievement. But this objection can be met in two ways. First, one can consider only those occupations which on various independent studies of occupational prestige have been consistently judged to be of high rank (1, 2). In the original exploration of all Strong items for Group 1, a number of these, such as physician, college professor, and army officer showed no significant differences at all on the n Achievement variable; in fact, physician and college professor actually showed trends in the reverse direction (i.e., with the subjects of low n Achievement favoring them more). Lawyer is another such high prestige occupation and in the five groups tested in the present study the "highs" favored it .055 more on the average than the lows, a difference which is only slightly and insignificantly higher than the average for all the control items (.034). No change of any size appears if the comparison is made when popularity of the item is relatively high or low. In the second place, one can consider the favorability toward the item by Strong's normative group of Men-in-general as a measure of the prestige of the item and compare the preference for strongly favored occupations with less favored occupations (see Table 1). On this basis, too, there is no evidence that the subjects with high n Achievement prefer more the highly liked occupations. The average difference in preference of the "highs" over the "lows" for the eight "high prestige" (.95 and up) occupations for the 38 available comparisons is

.077; for the 11 "low prestige" occupations for 50 comparisons it is .079.

Finally, against the hypothesis is the finding that as far as the financial risk items are concerned it is only when they are relatively unpopular that the greater preference of the subjects with high η Achievement appears in the data. In other words, it is only when general prestige of the occupations is at a low ebb (to the extent that this is indicated by liking for them) that motivation has a significant influence on preference for these occupations.

On the other hand, the data do support the hypothesis that high η Achievement tends to predispose people to favor a limited set of occupations associated with risk or with entrepreneurial activity, provided the type of risk and level of popularity of the item are taken into account. The best way to interpret the findings seems to be to consider the subject's task in stating his preferences for various occupations as a problem in perception, or at least apperception. From his point of view he is confronted with a number of fairly ambiguous occupational titles and must decide whether he likes each one or not. Obviously the titles have a certain meaning which may not be accurate and which may not be the same from subject to subject or more likely from one group of subjects to another. The subject's preference should somehow be the resultant of the interaction of the "meaning" of the occupation--how he "apperceives" it--with his motivation for the activities he thinks it represents. Considering the problem in this way helps to explain a number of the results obtained. To begin with, it may explain why there was no relationship between η Achievement and the total Strong Vocational Interest scales. That is, the total score on a given Strong scale is made up of answers to 400 different items which involve an unknown number of perceptual dimensions. If we assume for the moment that it is the "risk" dimension of an item which attracts people of high η Achievement

to it, it could readily be understood why this dimension could get lost in being mixed in with a great many others in obtaining the total scale score. In short, the scale score does not represent a unidimensional or at least a simple perceptual problem for the subject which is capable of being resolved in a consistent way by a motivational bias.

But if "risk" is the dimension of the items which attracts subjects with high n Achievement, why don't all the items on the Strong which involve risk show a relationship to high n Achievement? Several clearly do not. For example, items which deal with risks in making wagers (No. 399) or playing poker (No. 145), or working for one's self in a small business compared with working in a large corporation (No. 338) show no relationship to n Achievement. The apparent difficulty rises in two different connections. Certain occupations judged to be financially risky (e.g., building contractor and inventor) are not related to n Achievement nor are certain other occupations (e.g., auto or life insurance salesman, manufacturer, wholesaler) which might just as legitimately be considered a part of the entrepreneurial role as the actual occupations included in the empirical scoring key derived from Group 1. To try and understand what is going on here, let us look a little more closely at this last example. On a priori grounds one can break the business entrepreneurial role into four major functions: 1) purchasing the materials that go into the product, 2) obtaining capital to get the enterprise going, 3) seeing that the product is manufactured, and 4) selling the product. Obviously not every entrepreneurial job involves all of these four functions because they may be split up among different individuals, but they define the entrepreneurial role in the structural sense. Now it happens that the five items discovered to differentiate significantly between the high and low n Achievement subjects in Group 1 fall neatly into these four categories. Buyer of merchandise is clearly in category 1, stockbroker in cate-

gory 2, production manager in category 3, and advertiser and real estate sales-
man in category 4. It was for this reason and not just because of the empiri-
cal findings that special attention was devoted to these five items. Now the
problem to clear up is why these items which fit the entrepreneurial role de-
finition so nicely showed n Achievement differences whereas certain other items
did not which also might fit that definition. The explanation would appear to
be that those other items have connotations which somehow conflict with the as-
pects of the entrepreneurial role liked by subjects with high n Achievement.
That is, subjects must perceive building contractor differently from buyer of
merchandise although both have been classified by outside judges as involving
financial risk. Or similarly, manufacturer must have different connotations
for them than production manager, or making wagers from racing autos. In other
words, there are potentially a large number of items which might theoretically
be considered part of the entrepreneurial role or as involving risk, but only
empirical research will show which ones are sensitive to motivational differences.
Those which do not reflect motivational differences must be assumed to carry con-
notations which override or conflict with those perceptual aspects reacted to
differentially by the subjects with high and low n Achievement.

The importance of the perceptual dimensions of the items is nowhere more
vividly illustrated than in the effect of overall attitudes toward an item on
its discriminating power between subjects with high and low n Achievement. Here,
in other words, we have an example of the same item being differently perceived
on two occasions by different groups of subjects. To take a concrete example,
buyer of merchandise is highly disliked by the German students but highly liked
by the Aetna salesmen. Obviously the connotations of this occupations must be
quite different in Germany from what they are in life insurance circles in the
U.S. It is only when the general attitude toward the entrepreneurial role occu-

pations is unfavorable (average = 84, when 1 = indifferent) that the entrepreneurial role or financial risk items are significantly more favored by the subjects with high n Achievement. On the other hand, it is only when the general favorableness is high (average = 132) that the ego and physical risk items are more favored by the "highs". What explains this difference? Any explanation will have to be ad hoc because the difference for the two types of risk occupations was not predicted on theoretical grounds, but one can be found which fits in pretty well with a general analysis of the behavior of entrepreneurs carried out elsewhere (3). There it is argued that those situations are preferred by entrepreneurs (and presumably also by subjects with high n Achievement) which have the following essential characteristics: outcome largely dependent on personal skill and effort, some degree of risk, and measurability of results. Business occupations such as buyer of merchandise, advertiser, and factory manager have all of these characteristics to a considerable extent. In each case success, which can be measured in dollars and cents, is dependent on personal decisions and personal effort and there is a considerable possibility of failure if the wrong decisions are made or not enough effort is expended. When the general attitude toward such occupations is unfavorable, the "highs" may continue to prefer them because of these (to them) attractive features. On the other hand, the physical and ego risk occupations do not have these characteristics to quite the same extent. For example, the politician or scientist is dependent on his own efforts, he has knowledge of results, and he takes³ considerable risk, but factors of luck or circumstances beyond the individual's control may be perceived to play a larger part in such occupations. A politician may be defeated by a "whim" of the electorate no matter how hard he works; a scientist may spend his entire life working hard but pursuing the wrong clue; an auto racer may be side-swiped, an ex-

plorer defeated by a freak in the weather. It may be just as true objectively that a businessman may be bankrupted by circumstances beyond his control, but the point being made here is that perhaps this is not perceived to be as true of him as it is of the others. In any case, it is empirically true (see Table 2) that the preference of the "highs" for the financial risk occupations, regardless of popularity, is higher (.122) than for the ego and physical risk occupations (.077). If this argument is correct, if the "highs" really prefer the ego and physical risk occupations somewhat less, then one can understand why such a smaller favorable bias should appear only when there is a generally favorable attitude toward these occupations.

To put the matter in an historical context may help explain it. On the basis of these data, one could argue that high n Achievement operated first in the West to attract individuals to business enterprise which was relatively unpopular as a way of life compared with being attached to the church, the land, or the army. Then as business enterprise became popular more people with low n Achievement might have been attracted to it for prestige reasons rather than for the characteristics of risk, measurability of results, and personal responsibility which would be especially attractive to the "highs". So popularity would tend to wipe out the initial differential between the "highs" and "lows" by drawing in more "lows". On the other hand, high n Achievement would also operate to attract individuals to a somewhat lesser extent to exploration, politics, and the like which had some of the same characteristics as business enterprise, but not in sufficient strength to attract the "highs" more than the "lows" if the occupations were generally unpopular. If, however, the prestige of these occupations increases, then the "highs" would be relatively more attracted, perhaps because public support tends to remove those aspects of these occupations which had made them less attractive in the first place. For example, an unsuc-

cessful politician or explorer is really nobody if there is no public support for these occupations: so the "circumstances beyond one's personal control" may loom particularly large in discouraging "highs" from entering these occupations when they are unpopular. If, however, public support is strong, the unsuccessful politician or explorer may still measure his success by the esteem he is awarded for trying or for contributing his bit to some total enterprise. While such an interpretation is highly speculative and admittedly forced by what may turn out to be a result peculiar to the particular groups of subjects used in this research, it has the merit of stressing the fact that popularity or prestige of an occupation will act to change its apperceived characteristics and as these characteristics change, so will its attractiveness to subjects at different motivational levels.

It should be stressed again that the present study has been interpreted as one in vocational perception or apperception rather than in vocational choice or vocational adjustment. It has little or nothing to say about what occupations subjects with high \bar{n} Achievement will actually enter or which ones they will do well in. All it does is show that high achievement motivation biases subjects in favor of certain risky or entrepreneurial occupations provided the general level of favorableness toward those occupations is taken into account.

Summary and Conclusions

The present study was designed to test the hypothesis that subjects with high \bar{n} Achievement would be biased in favor of certain occupations, particularly those involving risk or entrepreneurial activity. Preferences for occupations from the Strong Vocational Interest Blank were determined for groups of subjects with high and low \bar{n} Achievement drawn from six different populations

(three groups of college freshmen, a group of American high school students, a group of German secondary school students, and a group of life insurance salesmen). In general the subjects with high n Achievement preferred occupations involving financial risk more than subjects with low n Achievement provided the general attitude toward these items in the group was unfavorable, and preferred ego and physical risk occupations more, provided the general attitude in the group toward these items was favorable. For a group of five items defining the "entrepreneurial role" selected both on the basis of empirical and theoretical considerations, the results were found to be substantially the same as for the financial risk occupations. There was no evidence supporting an alternative hypothesis that subjects with high n Achievement would prefer occupations of highest prestige in the society. The results are interpreted as reflecting a perceptual process in which the motivation of the subject interacts with the meaning of the occupational title to produce preference responses.

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