

PERSONALITY AND ACHIEVEMENT AMONG ABLE HIGH SCHOOL BOYS¹

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In a recent study Keimowitz and Ansbacher (4) found that eighth grade boys overachieving in mathematics showed more favorable personality characteristics on the California Psychological Inventory (CPI) than did their underachieving peers. This was consistent with Adler's observation that the child who does well in arithmetic is one who shows independence and social interest, whereas the underachiever reflects a pampered life style (1, pp. 241-242, 401), today frequently called dependency.

Might this not hold true also for overachievers and underachievers in general? More specifically, the present study tested the propositions that the high achieving boy will not only score higher on social adjustment, but will also be more highly motivated, more responsible, and more often emotionally engaged in achievement-related tasks than the low achiever.

METHOD

The *Ss* were 54 tenth and 50 twelfth grade boys of superior ability from a Midwestern public high school. The tenth graders were above the 70th percentile, the twelfth graders above the 61st percentile in ability of their respective classes. The lower cutoff point for the older boys was necessary to obtain a comparable sample.

Ability percentiles were arrived at by averaging percentile scores on the following tests: (a) Chicago PMA (ages 11-17), verbal, spatial, reasoning; (b) Draw-a-Man Test; (c) Davis-Eells Games; (d) Thurstone's Concealed Figures (C-2); (e) California Mental Maturity, administered to all boys in seventh grade; (f) SRA-PMA (ages 7-11), administered to all boys in fourth grade. The first four tests had been administered in the fourth grade to the tenth graders and in the sixth grade to the twelfth graders.

Achievement was expressed by a weighted score obtained from grades during the previous year. English, mathematics, science, history, etc. were given a weight of 3; typing, vocational agriculture, industrial arts, etc. a weight of 2; gymnastics, art, chorus, band, etc. a weight of 1.

The *Ss* were divided into high and low achievers as follows. Rank order correlations between ability and grade scores were computed. For the twelfth graders the correlation was 0.44, for the tenth graders 0.15. For the twelfth graders achievement rank was then obtained on the basis of grade-score rank (RG) minus $\frac{1}{2}$ ability rank (RA), $RG - \frac{1}{2} RA$, a measure of achievement in excess of ability. The tenth graders were assigned achievement ranks on the basis of grade scores alone.

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Those with achievement scores above the median for their respective group were designated as high achievers, those below the median, as low achievers. High and low achievers in either group were of the same average ability. The 27 high achieving tenth-graders had an average ability T-score of 74.3, the 27 low achievers one of 73.7. The 25 high achieving twelfth-graders had an average ability T-score of 70.2, the 25 low achievers one of 69.4.

Personality descriptions were obtained in five ways:

1. California Psychological Inventory, CPI (2). All 18 CPI scales were administered to the tenth graders, but only 14 scales to the twelfth graders. Both groups took the CPI while in tenth grade.

2. McClelland's *n* Achievement Test (5, pp. 185-214).

3. Interview to assess school-related interests. Each boy was asked questions about (a) grades desired, (b) adults who were important influences in his life, (c) school subjects liked, (d) amount and kind of reading, (e) educational-occupational goals, (f) peer identification, and (g) monetary goals. Response to each question category was scored, and the scores for the seven categories added toward a total score. An example of how a category was scored will be given for (c), school subjects. The score was based on number of subjects liked and academic relevance of the subject. English, mathematics, history, etc. were given a weight of 3; all other subjects a weight of 2. A bonus of 1 point was given if, for example, a boy mentioned chemistry or physics specifically, instead of merely science. With respect to (b), adult identification, if a boy named his father, he was given a higher score than if he named a person outside his family. A bonus of 2 points was given if the father had a college degree.

4. Interview with the boy's mother. To assess the boy's responsibility behavior his mother was asked: "To what extent does (boy's name) take responsibility for getting his homework done?" Responses describing the boy as very responsible or usually responsible were rated plus, other responses minus.

5. Parental Attitudes Research Instrument, PARI (6), to assess the mother's authoritarian-controlling attitudes with regard to child rearing. The PARI consists of 23 five-item scales dealing with family relationships. The parent (mother) indicates on a 4-point scale degree of agreement or disagreement with each item. Eighty of the 115 items have loadings with the authoritarian-control factor. Mothers of low achievers should have authoritarian-controlling attitudes toward their sons to a higher degree than mothers of high achievers.

The student interviews were conducted by the writer and three members of the Quincy Youth Development Project staff. Although the interviewers knew in a few cases who achieved well and who was not doing so well, the students had, at the time of the interview, not yet been grouped into high and low achievers. The interviews with the mothers were conducted by an elementary school principal and a senior high school counselor. These interviewers knew only that the sons of these mothers were all above average in ability.

RESULTS

In Tables 1-3, the difference between means of the high and low achievers plus and minus two times the standard error of this difference was used to estimate the parameters of the population difference between the means (7). The values are given in the last two columns of these tables.

1. *CPI personality characteristics.* The CPI results are consistent with those of Keimowitz and Ansbacher (4), the high achievers scoring generally higher than the low achievers. Thus the "highs" showed

TABLE 1. COMPARISON OF HIGH AND LOW ACHIEVING TENTH-GRADE BOYS (N = 27 EACH) ON CALIFORNIA PSYCHOLOGICAL INVENTORY (18 SCALES)

CPI scale	High achievers		Low achievers		$M_H - M_L$		
	Mean	S.D.	Mean	S.D.	$S_{\bar{d}}$	$-2 S_{\bar{d}}$	$+2 S_{\bar{d}}$
Socialization	58.85	7.33	48.11	12.06	2.708	5.32	16.16**
Responsibility	60.03	7.88	51.33	11.16	2.625	3.45	13.95**
Femininity	50.14	8.05	43.33	10.01	2.592	1.63	11.99*
Tolerance	60.62	9.86	53.59	9.99	2.701	1.63	12.43*
Self-control	54.81	8.78	48.44	8.67	2.375	1.62	11.12*
Achievement via conformance	59.70	10.05	52.81	9.58	2.671	1.55	12.23*
Achievement via independence	58.85	8.07	52.62	9.70	2.428	1.37	11.09*
Intellectual efficiency	60.40	7.52	55.37	6.95	1.970	1.09	8.97*
Psychological mindedness	59.37	7.54	54.66	9.18	2.284	0.14	9.28*
Communality	53.22	5.29	51.70	7.86	1.798	-2.08	5.12
Dominance	57.96	11.33	53.51	12.79	3.293	-2.14	11.04
Good impression	53.07	7.62	51.14	8.18	2.151	-2.37	6.23
Well-being	54.37	7.68	52.74	7.91	2.122	-2.61	5.87
Capacity for status	55.85	9.34	55.40	8.28	2.401	no evidence	
Sociability	56.48	10.34	57.07	10.99	3.265	no evidence	
Self-acceptance	54.88	3.34	55.07	10.63	2.151	no evidence	
Social presence	53.62	7.76	57.14	7.01	2.013	-7.55	0.51
Flexibility	48.44	10.55	51.74	9.34	2.711	-8.72	2.12

**Significant at .01 level.

*Significant at .05 level.

more positive personality characteristics. The results for the tenth graders are presented in Table 1, those for the twelfth graders, in Table 2.

TABLE 2. COMPARISON OF HIGH AND LOW ACHIEVING TWELFTH-GRADE BOYS (N = 25 EACH) ON CALIFORNIA PSYCHOLOGICAL INVENTORY (14 SCALES)

CPI scale	High achievers		Low achievers		$M_H - M_L$		
	Mean	S.D.	Mean	S.D.	$S_{\bar{d}}$	$-2 S_{\bar{d}}$	$+2 S_{\bar{d}}$
Capacity for status	58.64	7.04	48.32	10.46	2.521	5.28	15.36**
Responsibility	59.36	9.32	47.12	14.98	3.529	5.18	19.30**
Achievement via independence	61.56	14.02	51.36	3.87	2.906	4.39	16.01**
Tolerance	56.56	9.70	47.52	11.26	2.973	3.09	14.99**
Sociability	58.48	8.82	50.44	8.70	2.477	3.09	12.99**
Intellectual efficiency	56.56	7.40	49.32	11.62	2.755	1.73	12.75*
Achievement via conformance	61.92	15.33	51.08	18.72	4.839	1.16	20.52*
Communality	53.24	4.90	47.52	14.95	3.138	-0.56	12.00*
Flexibility	51.40	9.27	46.12	11.88	3.014	-0.75	11.31
Socialization	55.00	10.19	49.36	13.18	3.392	-1.14	12.42
Self-acceptance	53.60	8.10	50.20	9.86	2.552	-1.70	8.50
Dominance	57.72	10.60	53.96	10.83	3.031	-2.30	9.82
Self-control	53.60	12.46	50.84	11.16	3.345	-3.93	9.45
Well-being	53.28	10.50	51.24	10.61	2.992	-3.94	8.02

**Significant at .01 level.

*Significant at .05 level.

Among the tenth graders 9 scales out of 18, among the twelfth graders 7 scales out of 14 differentiate at the .05 level or better in favor of the "highs." The scales which differentiate significantly among both groups are: responsibility (at the .01 level) and tolerance; but also achievement via conformance, achievement via independence, and intellectual efficiency.

2. *Achievement motivation.* On the McClland *n* Achievement Test the high achievers of both grades attained somewhat higher total scores than the low achievers, but the differences are not significant (Table 3, *a*). When the scores on three involvement categories (need,

TABLE 3. COMPARISON OF HIGH AND LOW ACHIEVING TENTH-GRADE BOYS (N = 27 EACH) AND TWELFTH-GRADE BOYS (N = 24 EACH) ON (a) ACHIEVEMENT MOTIVATION, (b) SCHOOL RELATED INTERESTS, AND (c) MOTHER'S AUTHORITARIAN CONTROLLING ATTITUDES

	High achievers		Low achievers		$M_H - M_L$		
	Mean	S.D.	Mean	S.D.	S_d	$-2 S_d$	$+2 S_d$
(a) Achievement Motivation							
Tenth graders	5.04	4.47	4.26	5.82	1.41	-2.04	3.60
Twelfth graders	3.75	1.89	2.92	3.46	0.80	-0.77	2.43
(b) School Related Interests							
Tenth graders	23.52	3.67	18.48	4.54	1.12	2.80	7.28**
Twelfth graders	22.50	4.93	19.00	6.27	1.63	0.24	6.76*
(c) Mother's Authoritarian Attitudes							
Tenth graders	176.52	75.04	190.48	32.00	15.45	no evidence	
Twelfth graders	174.48	35.98	198.71	29.28	10.12	-44.47	-3.99*

**Significant at .01 level.

*Significant at .05 level.

affect, instrumental activity contributing to an achievement goal) are examined (3), we find that the high achievers score significantly more often in these categories than the low achievers (Table 4, *a*). A test of proportions was used for this comparison (7, pp. 429-433).

TABLE 4. PROPORTION OF HIGH AND LOW ACHIEVERS ATTAINING POSITIVE AND NEGATIVE SCORES IN (a) THREE SELECTED INVOLVEMENT CATEGORIES (McCELLAND TEST) AND (b) TAKING RESPONSIBILITY FOR SCHOOL HOMEWORK (MOTHER'S REPORT)

		N	Scores		P
			negative	positive	
(a) Involvement	High achievers	(N = 51)	19	32	.025
	Low achievers	(N = 51)	30	21	
(b) Responsibility	High achievers	(N = 46)	8	38	.01
	Low achievers	(N = 46)	25	21	

3. *School-related interests.* Total scores from the interview on school-related interests for high and low achievers are compared in Table 3, *b*. Tenth grade high achievers scored very significantly higher, twelfth graders significantly higher. It will be remembered that a higher score here is based on desire for higher grades, more frequent identification with the father who is more often better educated, better liking for school subjects of academic relevance, more and better quality reading, and higher educational-occupational goals.

4. *Responsibility behavior.* The information obtained from the mothers regarding the extent to which a boy takes responsibility for getting his homework done, was compared for high and low achievers by using a test of proportions. The results are shown in Table 4, *b*. The data strongly suggest that the high achieving boy is more likely to take responsibility for his homework than the low achiever. This might be interpreted to mean that the high achiever shows more independence, self-direction, while the low achiever shows more dependency, direction from others, characteristic of the pampered child.

5. *Mother's controlling attitude.* It was predicted that mothers of low achievers should have authoritarian controlling attitudes toward their sons to a higher degree than mothers of high achievers. Comparison of the PARI scores of mothers of high and low achievers tentatively support the prediction in the case of twelfth graders. See Table 3, *c*. It should be noted that for mothers of high achieving tenth graders the variability is quite large. What accounts for this, is unknown.

SUMMARY AND CONCLUSIONS

Fifty-two high achieving boys (27 tenth graders and 25 twelfth graders) were compared with an equal number of low achievers (groupwise matched for grade and intelligence) on (*a*) the California Psychological Inventory, (*b*) McClelland's projective test of achievement motivation, and (*c*) results of an interview assessing school related interests. The high achievers scored higher in each instance. Thus we may conclude that they show more favorable personality characteristics, especially responsibility and tolerance, somewhat higher motivation, greater involvement in achievement tasks, and more school-related interests. (*d*) Mothers of high achievers reported more often than those of low achievers that their sons take responsibility for their homework; to this extent, we would say, the high achievers

reflect greater independence. (e) The mothers of high achievers also scored lower in authoritarian controlling attitudes than those of low achievers. This is interpreted to mean that the former support independence in their sons, whereas the latter support a dependency relationship (pampered life style).

The findings are consistent with Adler's views regarding life styles of achievers and underachievers.

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