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National Merit Scholars, chosen in 1956 and 1957, were studied to assess career progress made by highly gifted students 7 to 8 years after they had entered college and to identify factors that possibly contributed to the differential progress observed. Before entering college, each of the 368 subjects was asked what level of education he intended to achieve. From questionnaires completed in summer 1964 it was found that 6% of males and 7% of females had not obtained a bachelor's, 13% of males and 25% of females had completed their bachelor's but had not attempted graduate study, 72% of males had a master's or were still pursuing graduate study, and 10% of males had obtained a doctoral or professional degree. Among women, 68% had completed some graduate work. While scores on precollege scholastic ability exams did not affect educational progress, higher annual income and level of education attained by fathers plus a greater emphasis on education and learning in the home were factors contributing to a higher level of education among male students. Among females, the same held true except that scholars from wealthier families were making the least progress. Jewish males and Catholic or Jewish females appeared more likely to have progressed to the graduate level. Personality factors determined by the CPI showed five scales to differentiate significantly among the male progress groups and five differentiated among the female groups. (CS)

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ABSTRACT

This study had two main purposes: (1) to assess the variability in career progress made by highly gifted students seven to eight years after they entered college; and (2) to identify factors that possibly contributed to the differential progress found. A total of 1014 male and 368 female Merit Scholars were studied. Followup data indicated that the Scholars of both sexes differed markedly in the level of education achieved. These differences did not appear to be due to unequal scholastic ability or to differential high school achievement. Family background factors such as parents' education, father's occupation, family income, and number of books in the home appeared to be related to the level of education attained. On the CPI, five scales (So, To, Ac, Fx, and Fe) differentiated significantly among the male progress groups and five (So, Sp, Sa, Sc, and Gi) differentiated among the female groups.

CAREER PROGRESS OF MERIT SCHOLARS

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This research has two main purposes: first, to assess the variability in career progress made by highly gifted students seven to eight years after they entered college; and second, to identify factors that possibly contributed to the differential progress observed.

The search for such knowledge is no inconsequential matter since, as Cox (1926), Terman and Oden (1959) and others have shown, those in our society who make the most significant contributions in the form of major discoveries or innovations usually possess high intellectual ability; and the presence of unusual ability frequently, although not always, can be spotted at an early age. Therefore, not only is it important to identify those with high ability in order that they may be stimulated to make maximum use of their potential, but it is also relevant to study the reasons why some fall short of full use of their capabilities.

Terman's fifty-year study, half completed about midcentury (Terman and Oden, 1947), represents the hallmark of research with the highly gifted. His achievements were possible, however, only because of his dogged persistence in systematically following the progress of a carefully selected sample of students who demonstrated unusual intellectual capability in childhood. There appears to be no methodological shortcut for research of this type. But opportunities for longitudinal study such as that initiated by Terman are rare.

The National Merit Scholarship Corporation, which was originated in 1955 for the purpose of annually identifying and honoring the nation's most talented youth, provides an opportunity for further longitudinal study of the

exceptionally gifted. Merit Scholars are selected in three steps. The first step involves completion of the National Merit Scholarship Qualifying Test (NMSQT), which is a three hour test of educational development given near the end of the junior year in high school. Students scoring highest in each state are selected as Merit Semifinalists. In the second step, Semifinalists who are endorsed by their schools and whose high scores are verified by a second test--the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board--become Merit Finalists. The last step consists of a selection committee and scholarship sponsors using high school records, recommendations, and test scores to select the Merit Scholars.

Since this study focused on fairly long term educational and career progress, only the first two groups of Merit Scholars--selected in 1956 and 1957--were investigated. On the average they are remarkably talented individuals: they scored in the top one percent on national ability norms, they achieved average grades within the top two percent of their high school graduating classes, and they were highly recommended by school officials.

Nevertheless, despite the potential of each Scholar, substantial differences in educational and career progress can be observed among them seven to eight years after they entered college: some have already breezed through doctoral programs and are actively engaged in occupational careers; many are still pursuing their educational goals; some have dropped out of college with hopes of returning at the earliest opportunity; and a few have shown unmistakable signs of falling short of their early promise. The reasons for this differential progress are unknown although they are the subject of frequent speculation. Although the life stories of these gifted individuals are still unfolding, perhaps sufficient time has elapsed to allow stable patterns to emerge.

Method

The number of boys receiving Merit Scholarships in 1956 and 1957 were 403 and 611, respectively, the total being 1014. For girls, 152 received Merit Scholarships in 1956 and 216 in 1957, and the total for both years was 368.

This study focused on the career progress of gifted students, but advancement in their careers is heavily contingent upon the completion of higher educational programs necessary for entry into their various career fields. Since the progress of these Scholars covered the seven or eight year span following their admission to college, the assessment of career progress in this study was necessarily limited to the level of education completed.

Based on his status in the summer of 1964, each male was placed into one of four educational progress groups: (1) a bachelor's degree not obtained; (2) a bachelor's degree completed but no graduate study attempted; (3) a master's degree completed or still pursuing graduate study; and (4) a doctoral or professional degree obtained (e.g., PhD, EdD, LLB, MD, DDS, etc.). A separate category for "master's degree only" was not made because about 85 percent of all males who had completed sufficient work for a master's degree planned additional study, and many Scholars were enrolled in doctoral programs where a master's degree was not given.

Only three educational progress categories were used for female Scholars. The first and second categories were the same as those used for males. However, because only a few women had completed work for a doctoral or professional degree, the third and fourth categories were combined to make a single group.

The sexes were studied separately in each analysis.

The Scholar data used in this study were collected throughout the eight year span involved. Most of the data were obtained, however, either as part of the initial selection process or on the 1964 followup questionnaire. The

sources of data and the number of Merit Scholars for which each source was available are shown in Table 1. Each of these sources is briefly described as follows:

Table 1

Questionnaires Used in this Study and Number of Scholars Completing Each

Questionnaire	Males			Females		
	1956	1957	Total	1956	1957	Total
Finalist Information Blank	390	584	974	145	199	344
1956 Scholar Questionnaire	378	---	378	143	---	143
Survey of Talented High School Graduates	---	484	484	---	169	169
1961 Followup	---	494	494	---	179	179
1964 Followup	398	591	989	152	209	361
Total Appointed	403	611	1014	152	216	368

The Finalist Information Form contains several kinds of data collected as part of the Scholar selection process: SAT-verbal and SAT-mathematics scores, high school percentile rank (HSR), high school activities, parents' income, amount of initial stipend, precollege major and career plans.

The 1956 Scholar Questionnaire was administered only to 1956 Scholars. It included considerable information in these areas: parents' education and occupation, family finances, home facilities, and vocational planning.

The Survey of Talented High School Graduates was completed only by the 1957 Scholars and contained much of the same information included on the 1956 Scholar Questionnaire. The California Psychological Inventory (CPI) was administered to this group in 1957 and again in 1963.

The 1961 Scholar Followup obtained information about the 1957 Scholars four years after they entered college. This questionnaire stressed the Scholar's educational progress, his career plans, and factors that he believed had influenced his plans. His personal aspirations were examined, as were his self-ratings on a number of personality characteristics.

The 1964 Followup obtained information for both the 1956 and 1957 Scholars. Several kinds of data were collected: academic and vocational achievement, educational and career plans, activities and interests, and religious views.

Each of the questionnaires contained items of both the structured (multiple choice) and open-ended types. The response rates for these mailed questionnaires were high, but the percentage of completed questionnaires obtained for

the 1964 followup was unusually high. Useable questionnaires were completed by 1350 of the 1354 male and female Scholars contacted. This high percentage was due to persistent mailed reminders and to a telephone interview with the remaining nonresponders. In addition to the nine deceased Scholars, 19 others could not be located in 1964.

Results

Educational Progress

Of the 1014 males receiving Merit Scholarships in 1956 and 1957, all but 25 were classified into one of the four educational progress groups. Of those not classified, nine were deceased and insufficient information was available for the remaining 16 to make a valid classification. Of those that were classified, 59 males (about 6 percent) had not earned a bachelor's degree by 1964; 125 (about 13 percent) had a bachelor's but no graduate study; 708 (about 72 percent) had a master's degree or were still doing graduate work; and 97 (about 10 percent) had acquired a doctorate or equivalent professional degree. Clearly, these males differed in the amount of educational progress achieved.

Of the 368 females, 361 were distributed into three progress groups. Seven could not be classified because of insufficient information. A total of 27 (about 7 percent) had not earned a bachelor's degree, 90 (about 25 percent) had a baccalaureate but no graduate study, and the remaining 244 (about 68 percent) had completed some graduate work. Thus, as with the males, the women Scholars showed substantial differences in the amount of educational progress made.

The main objective of a Merit Scholarship is to help the student obtain a bachelor's degree. This was achieved by a very high percentage of each sex. About 95 percent of the 1956 and 93 percent of the 1957 males reached this

goal; while 94 and 92 percent of the 1956 and 1957 females, respectively, completed this degree. These percentages may improve slightly since some Scholars of both sexes were still pursuing undergraduate programs in 1964. When the many factors (e.g., sickness, family obligations, etc.) that might interfere with a student's plans are considered, a success ratio of 95 percent is probably close to the ceiling that can be obtained by selection.

Although the followup in 1964 revealed clear differences in the amount of progress made by Scholars, can these be reduced to nothing more than a reflection of differences in their original precollege plans? Table 2 shows for each educational progress group, the percentages of 1957 Scholars (data were not available for the 1956 group) with various educational objectives prior to college entrance in 1957 as well as in both 1961 and 1964. These data illustrate

Table 2

Percentages of 1957 Scholars in the Educational Progress Groups Reporting Various Aspiration Levels in 1957, 1961, and 1964

Degree Attained by 1964	Year	Males Aspiration Level N	BA-BS	MA-MS	Dr. or Prof. Degree	Females Aspiration Level N	BA-BS	MA-MS	Dr. or Prof. Degree
No BA-BS	1957	27	11	27	63	8	25	25	50
	1961	23	39	22	39	8	63	37	--
	1964	33	33	25	42	9	67	17	17
BA-BS only	1957	65	22	32	46	44	50	32	18
	1961	61	31	38	31	44	50	32	11
	1964	72	31	36	33	45	45	36	17
Master's or some Graduate work	1957	367	11	24	66	117	24	40	36
	1961	366	2	15	83	118	2	41	57
	1964	443	--	16	84	121	1	37	62
Doctoral or professional degree	1957	26	--	8	92				
	1961	26	--	--	100				
	1964	31	--	--	100				

that with the exception of Scholars with doctoral or professional degrees, Scholar's precollege plans were not a good indicator of the amount of education actually completed by 1964. For example, of those without a bachelor's degree, 89 percent of the men and 75 percent of the women professed prior to beginning college that they wanted at least a master's degree

On the other hand, the educational level to which Scholars aspired in 1961 and 1964 reflects to a considerable extent the actual progress they were making. Of males with a doctorate or equivalent, for example, 92 percent aspired to that level in 1957, but by 1961 virtually every one wanted such a degree. In contrast, 63 percent of the men without a bachelor's degree wanted a doctorate or equivalent in 1957, but by 1961 this percentage had decreased to 39.

While generally fewer percentages of women sought doctoral level degrees than did men, the drifts up or down in aspiration level were nevertheless good indicators of how things were going. For example, whereas 50 percent of the women Scholars without a bachelor's degree aspired to the doctoral level in 1957, by 1961 this percentage had shrunk to zero.

These data seem to indicate that at the time of admission to college these bright students were not able to accurately predict the level of education they would actually attain. During the college years, however, more Scholars raised than lowered their educational aspirations.

Most changes in level of aspiration were made within the first four years after entering college. Although changes continued to be made between 1961 and 1964, these were not as frequent as those occurring in the prior four year period.

Table 3 shows the major activity of Scholars who had completed varying levels of educational progress by 1964. Of the males without a bachelor's degree, only a few were still enrolled in school. Although most were employed, roughly one-third were not working in the career field they ultimately hoped

Table 3

Percentages of Scholars in the Educational Progress Groups Engaged in Various Activities in 1964

Major Activity	Males				Females		
	No BA-BS	BA-BS only	Some Grad. work	Dr. or Prof. Degree	No BA-BS	BA-BS only	Some Grad. work
Attending college or professional school	14	11	56	12	17	04	35
Employed in career field	41	58	31	71	--	22	31
Employed in other than career field	30	24	08	12	28	16	10
Homemaker*	--	--	--	--	50	52	15
Other	08	04	02	03	--	01	03
Attending college and employed in career field	03	02	02	01	--	--	02
Attending college and employed in other than career field	05	01	00	00	00	00	01
Attending college and homemaker	--	--	--	--	06	03	01
Employed in career field homemaker	--	--	--	--	--	--	01
Employed in other than career field and homemaker	--	--	--	--	--	03	02

Note:--Percentages are based on responses from 802 males and 306 females.

* Caring for family.

to enter. The main reason seemed to be that they lacked the necessary education to meet the minimum entry requirements of the primary career field. Interestingly, almost all indicated that they still planned to obtain additional education.

Although about 69 percent of the males with a bachelor's degree still desired a higher degree, only 14 percent were enrolled in graduate school. Sixty percent were employed in their career fields. The majority of those working outside their career fields were in the armed forces.

Of the males with some graduate work, 89 percent were still in college or professional school, working in their career fields, or a combination of school

and work. Only two percent were both attending school and working in their careers.

Most of the males who had finished doctoral or professional degrees were employed in their career fields; however, 12 percent were still doing graduate study on a full time basis.

Of the female Scholars, the major activity of those with a bachelor's degree or less was homemaking. While 22 percent of those with a baccalaureate were employed in their career fields, none of the women with less than a bachelor's reported employment in their career fields. As Table 3 shows, only small percentages of women in any of the groups attempted to be homemakers and students at the same time.

The results for women must be interpreted, however, in light of the time in their careers in which the 1964 followup study was made. These women were 25 to 26 years of age and many were primarily committed to caring for their young families. But 90 percent of all the female Scholars indicated in 1964 that they still had career plans. Most of those whose plans were interrupted to have children indicated that they wanted to resume their vocational careers as soon as possible.

Factors Related to Differential Progress

Scholastic Ability and High School Achievement. The method used in selecting Scholars insures considerable homogeneity in terms of tested scholastic ability. Despite the restriction of scores to the high end of the talent distribution, however, it still might be expected that the initially more able Scholars would tend to reach the higher educational levels more frequently than those scoring relatively lower in initial ability. However, the mean scores shown in Table 4 for the verbal and mathematics sections of the SAT and the SQT fail to reveal a consistent pattern in relating ability to educational progress. Although analysis of variance found a significant difference at the .01 level for

males on the SAT-V, this difference did not hold up on the SQT-V. For females, a significant difference at the .01 level was found on the SAT-M, but this also was not supported by the SQT-M results. Thus in the absence of clear trends,

Table 4

Mean Scores for Scholastic Ability Tests

Ability Tests		Males				Females		
		No BA-BS	BA-BS only	Some Grad. work	Dr. or Prof. Degree	No BA-BS	BA-BS only	Some Grad. work
SAT-V*	Mn	681.8	688.8	694.2	703.6	715.9	700.9	715.0
	SD	43.8	42.7	40.4	42.2	31.0	32.9	37.2
SQT-V**	Mn	50.5	50.7	51.0	49.3	50.3	49.7	52.5
	SD	5.5	5.8	5.7	5.7	8.8	5.3	5.1
SAT-M*	Mn	730.3	717.6	733.0	734.8	682.1	674.7	700.5
	SD	51.8	62.4	59.0	59.1	71.7	67.7	57.4
SQT-M**	Mn	54.7	54.8	55.6	52.9	47.6	48.3	50.8
	SD	5.2	6.8	7.5	8.6	3.8	7.4	7.3

* Scores available for 1956 and 1957 Scholars.
** Scores available for 1957 Scholars only.

the most reasonable conclusion appears to be that the progress groups within each sex had approximately equal ability.

It can be seen from Table 4, however, that male Scholars tended to score higher on the mathematics section of both tests than on the verbal section. Females, on the other hand, obtained higher scores on the verbal section than on the mathematics section of these tests.

The average HSR's for all progress groups of both sexes were almost identical. All had HSR means at the 98th or 99th percentile. Thus, at the time of selection, not only were the progress groups within each sex approximately equal in tested scholastic ability but they were all superior high school

achievers. Therefore, other differences that may be found among these educational progress groups would seem to be independent of these factors.

Family Background. A number of family background factors appeared to be related to the educational progress of Scholars. Data pertaining to fathers' occupation, parents' education, and stipend received are shown in Table 5.

Table 5

Family Background Characteristics of Merit Scholars

Background Characteristics	Males				Females		
	No BA-BS	BA-BS only	Some Grad. work	Dr. or Prof. Degree	No BA-BS	BA-BS only	Some Grad. work
% of Fathers in Prof. Occup. or own Business	48	45	58	65	63	63	69
Fathers' Education							
% completed HS	56	64	70	69	75	79	90
% some college	33	46	51	60	63	69	78
Mothers' Education							
% completed HS	48	59	66	74	100	92	95
% some college	19	33	39	50	80	53	74
Average Initial Stipend*	711	726	630	568	500	623	676
Average Final Stipend*	758	781	699	657	496	663	770

* Rounded to nearest dollar.

Fathers of males with a doctoral or professional degree were better educated on the average than fathers of Scholars who had completed less education by 1964. Whereas 60 percent of the most educationally advanced males had fathers with at least some college education, the corresponding percentages for the lesser advanced groups, from some graduate work to no BA or BS completed were 51, 46, and 33. The same pattern was observed among mothers although they generally were not as well educated.

A similar trend was found for the occupations of Scholars' fathers, with a higher proportion of males in the most educationally advanced group having

fathers who worked in the professions or who owned their own businesses. Likewise, father's average income was related to the four levels of education attained by Scholars. The average income for fathers' of males with a doctoral or professional degree was one-third more than that for males without a bachelor's degree. It is interesting to note that, since the amount of a Merit Scholarship is determined on the basis of need, the average initial stipend received by the least educationally advanced males was about 25 percent more than that received by males who had progressed most.

The level of educational progress attained by Scholars was also associated with emphasis in the home on education and learning. Scholars with doctoral or professional degrees had significantly more books in their homes, more of their peers went to college, and more of their parents were active in literary and study groups than was found for males with less education, particularly those with a bachelor's degree or less.

In general, the parents of female Scholars were better educated than were the parents of male Scholars. However, the level of education attained by women Scholars was associated with the amount of education completed by their parents. Among women graduate students, 78 percent of their fathers and 74 percent of their mothers had at least attended college.

Although roughly two-thirds of the women in each progress group had fathers employed in professional occupations or who owned their own businesses, the families of women making least progress were better off financially. In fact, the females who were doing graduate work received an initial stipend that was about 35 percent more than that given women who had not attained an undergraduate degree by 1964. This trend is reversed from that found for males. The differences in financial circumstances among women seems to be due to a greater proportion of the least advanced females having fathers engaged in lucrative business ventures.

The evidence was strong that female graduate students came from families that placed unusually high value upon education, perhaps even more than that by families of the more educationally advanced males. Not only were both parents better educated, but they read more, owned more books, and they were more active in study and literary groups. In contrast with other groups, males included, the mothers of female graduate students were much more likely to be engaged in activities such as sorority groups, the American Association of University Women, and the League of Women Voters.

Table 6 suggests that the religious backgrounds of Scholars were also related to educational advancement. Male Scholars reared in a Jewish background, for example, were more likely to have earned a doctoral or professional degree. Conversely, only six percent of the Jewish males had a bachelor's or less while about 20 percent of those reared in the other faiths had a BA-BS or less. Females reared in the Catholic and Jewish faiths appeared more likely to have progressed to the graduate level.

Table 6

Percentage of Scholars Reared with Different Religious Views Making Various Levels of Educational Progress

	Religious Preferences				
Scholar Groups	Protestant	Catholic	Jewish	Other	None
Male					
No BA-BS	06	05	03	16	15
BA-BS only	15	14	03	05	04
Some Grad. work	70	73	76	68	77
Dr. or Prof. Degree	09	08	18	11	04
Total N	655	142	106	19	53
Female					
No BA-BS	08	07	05	22	07
BA-BS only	26	17	20	22	21
Some Grad. work	66	76	75	56	71
Total N	241	42	40	9	14

Personality Characteristics. The results obtained from the first CPI testing are shown in Tables 7 and 8. Table 7 shows that five of the 18 CPI scales differentiated significantly among the four male educational level groups; and the males who advanced least were the ones most noticeably different from the other groups. They scored lowest on the Socialization, Tolerance, and Achievement via Conformance scales, all of which may be interpreted as indicative of maladjustment. They also scored highest on the Flexibility scale and lowest on the Femininity scale, both of which are labeled measures of intellectual and interest modes (Gough, 1957).

Table 7

Mean CPI Scores for the 1957 Male Scholar Progress Groups

CPI Scales	No BA-BS		BA-BS only		Some Grad. work		Dr. or Prof. Deg.		
	Mn	SD	Mn	SD	Mn	SD	Mn	SD	F
Dominance	28.4	6.1	31.1	5.5	30.8	5.7	33.5	6.6	2.11
Capacity for Status	22.1	3.3	22.4	2.8	22.1	3.2	22.6	3.5	.31
Sociability	24.7	5.0	26.6	4.2	26.0	4.8	27.7	5.0	1.26
Social Presence	37.1	5.8	38.7	5.7	36.7	5.6	36.9	7.9	1.57
Self-acceptance	21.3	3.8	23.2	2.8	22.3	3.8	23.0	3.8	1.35
Sense of Well-being	35.5	4.0	37.9	3.1	37.9	3.7	37.7	3.6	2.27
Responsibility	33.0	5.2	34.5	3.8	35.0	3.5	34.9	3.6	1.75
Socialization	34.5	6.5	38.6	5.1	40.1	4.3	39.2	5.2	8.53*
Self-control	25.2	7.0	29.1	5.9	29.6	6.9	28.5	8.8	2.24
Tolerance	23.7	4.9	26.9	3.2	26.2	3.3	26.5	3.2	3.56**
Good Impression	14.9	5.2	17.8	5.8	18.3	5.5	17.7	5.1	2.07
Communality	24.7	2.6	26.0	1.5	25.7	1.8	25.5	1.5	2.15
Achievement via Conformance	25.5	5.0	28.2	4.0	29.8	3.8	28.9	4.5	8.07*
Achievement via Independence	23.9	3.2	23.6	3.5	23.5	2.9	24.0	2.7	.21
Intellectual Efficiency	42.5	4.8	44.3	3.2	44.1	3.1	43.8	3.8	1.42
Psychological-mindedness	13.9	2.5	13.3	2.3	13.7	2.3	12.9	2.2	1.13
Flexibility	14.9	4.0	11.7	3.6	11.5	3.9	12.3	4.4	4.35*
Femininity	15.4	3.9	16.0	4.1	17.4	3.6	18.8	3.2	4.06*

Note:--* $p \leq .01$ level; ** $p \leq .05 > .01$.

There is some evidence, therefore, that at the time of selection the least successful males were more poorly adjusted emotionally than those who acquired at least a bachelor's degree by 1964. This possibility is substantiated by the fact that in comparison with norms for college males provided by the test author the "No BA-BS" means deviated by a half standard deviation or more on the Socialization, Achievement via Conformance, and Flexibility scales. Further support comes from the finding that more of the males who progressed least received psychotherapy during their college years than the males who acquired a bachelor's degree or more.

It is also interesting that the CPI retest scores obtained for the least successful males in 1963 were remarkably similar to those found in 1957. However, on the 1963 testing, nine scales reached significance at the .05 level or better in differentiating the four progress groups: Dominance, Responsibility, Socialization, Self-control, Tolerance, Good impression, Achievement via Conformance, Psychological-mindedness and Femininity.

Whereas in the 1957 testing the three groups of male Scholars who subsequently progressed through their bachelor's programs or beyond obtained similar CPI mean scores, the Scholars who acquired a doctoral or professional degree appeared somewhat different from the other groups on the followup testing. This was particularly apparent on the Dominance, Responsibility, Socialization, Self-control, Tolerance, Good impression, and Psychological-mindedness scales. They had higher mean scores on each of these than the other groups.

These group differences were further substantiated by Scholar self-ratings obtained at the time the followup CPI was administered. In contrast with the other groups, these self-ratings revealed that Scholars who achieved the highest educational level considered themselves more motivated to achieve, more

persevering, more concerned with scholarship, more expressive, more emotionally stable, and having greater self-understanding.

CPI results for females are listed in Table 8. Five of the scales revealed significant differences at the .05 level or better. However, unlike the results found for males, the women graduate students were most noticeably different from the others, obtaining lower means on the Sociability, Social Presence, and Self-acceptance scales and higher means on the Self-control and Good impression scales. Apparently involving behavior that might be described as somewhat passive, methodical, cooperative, industrious, and designed to made a good social impression, these traits appear to fit a pattern which might be called a "grade-getting" syndrome.

Table 8

Mean CPI Scores for the 1957 Female Scholar Progress Groups

CPI Scales	No BA-BS		BA-BS only		Some Grad. work		F
	Mn	SD	Mn	SD	Mn	SD	
Dominance	29.4	1.8	31.7	4.6	29.9	5.7	1.51
Capacity for Status	24.0	3.7	23.4	2.7	23.2	2.8	.29
Sociability	27.9	2.4	28.6	4.1	26.3	4.3	3.74**
Social Presence	38.6	2.8	38.1	4.6	36.0	4.6	3.18**
Self-acceptance	23.1	1.6	23.5	3.3	21.8	3.5	3.28**
Sense of Well-being	36.9	4.1	38.2	3.1	37.8	3.5	.49
Responsibility	34.6	2.7	35.3	3.8	36.1	3.6	1.07
Socialization	40.9	4.4	40.0	4.9	41.2	4.7	.73
Self-control	25.7	6.6	28.9	7.5	32.1	6.2	5.21*
Tolerance	26.6	2.0	28.6	2.6	27.4	2.8	1.47
Good Impression	14.7	3.1	17.8	5.8	19.6	5.3	3.49**
Communality	26.4	1.1	25.9	1.6	25.7	1.8	.74
Achievement via Conformance	27.3	3.0	29.1	3.5	30.1	3.7	2.54
Achievement via Independence	23.7	3.4	23.0	2.5	24.2	2.7	2.33
Intellectual Efficiency	43.6	2.3	44.4	3.1	45.0	2.9	1.18
Psychological-mindedness	12.0	1.9	13.3	2.2	13.4	2.2	1.28
Flexibility	14.0	4.6	11.6	3.7	11.4	3.9	1.38
Femininity	23.9	3.4	22.7	3.0	22.7	3.3	.40

Note.--* $p \leq .01$ level; ** $p \leq .05 > .01$.

On the CPI retesting in 1963, the mean scale scores for the highest female achievers changed little, but considerable change was detected among the scores

for those who made least progress. Differences at the .05 level or better were found for the Dominance, Self-acceptance, Good impression, Intellectual Efficiency, and Psychological-mindedness scales. The women who made least educational progress obtained the lowest means on each of these except Self-acceptance. Thus, while the women making the most progress apparently changed little over their college years, those who were least successful appeared to become more confused and unhappy. On self-ratings, those without a bachelor's degree considered themselves less persevering and less concerned with scholarship than the most advanced women, but they described themselves as more popular with the opposite sex.

Although these CPI test-retest results provide interesting information about personality trends that occurred during the college years, the 1957 results are of most value for the present purposes in revealing that personality characteristics appear to be related to Scholars' subsequent educational progress.

Discussion

Merit Scholars of both sexes were found to differ markedly in the level of education attained seven or eight years after entering college. These within-sex differences did not appear to be due to unequal ability as indicated by scholastic aptitude tests or to differential high school achievement. Thus, any other factors found to differentiate among these educational level groups would be controlled on these ability variables.

Factors pertaining to family background and Scholar personality characteristics appeared to be related to the level of education achieved. These results are consistent, therefore, with the findings of previous studies in indicating that such factors are correlated with intellectual productivity (e.g., Root, 1921; Jones, 1925; and Goddard, 1928). Terman and Oden (1940) reported that, with intelligence controlled for gifted adults, the more successful achievers "had generally the more satisfactory family background in terms of

occupational status, marriage permanence, parental education, quality of the home, home instruction, and mental stock as indicated by higher sibling IQ and by fewer cases of abnormality in the relatives." However, in none of these studies was high school achievement controlled at the time students entered college.

In order that the diverse results obtained might fit a comprehensible pattern, a brief description will be given for each of the various progress groups.

Male

No BA-BS Degree. Two sets of factors were identified that perhaps interferred with the progress of this small group of gifted males. First, they appeared to have relatively more than their share of emotional problems. Evidence to this effect was found on the CPI results, on self-ratings, and on the fact that more of them received psychotherapy.

It may be inferred that their earliest college years were especially frustrating since almost two-thirds of them began college with doctoral level educational plans. Until they entered college, few of them had experienced previous difficulty with academic tasks. Although their college years may have been especially stressful, personality test scores suggested that their general emotional condition remained relatively unchanged on the average over the six year span involved.

The second factor possibly contributing to their subpar educational performance is related to various family background and socioeconomic characteristics. For example, the value of learning as a means of satisfying intellectual curiosity did not appear to be as strongly emphasized in this group as it was among those who were more successful. Fathers' occupational status and relatively low income, the lack of parental involvement in educationally oriented activities, and the relative lack of instructional materials in the home were

other factors that appeared to contribute to relatively less emphasis on learning in the home environment.

This group consisted of only about five percent of the 1956 and 1957 male Scholars. Because of the scores of possible conditions that can seriously interfere with or permanently halt student educational progress, the 95 percent accuracy ratio probably is pushing the upper limit for practical prediction problems.

BA-BS Degree Only. Consisting of about 13 percent of the entire group, the CPI results suggested that these were rather easy-going individuals who lacked the drive and ambitiousness necessary to achieve maximally. There was no particular indication that emotional maladjustment contributed heavily toward the apparent lack of "cannonball" qualities regarding higher education that are possessed by the more achievement oriented Scholars. It may be inferred that they simply had different life styles and different personal needs. Relative to the other groups, their educational aspirations, for example, were markedly below those of other Scholars even at the time of admission to college.

This general lack of initiative toward obtaining a higher degree may be attributed in part to their family background: their parents were not well educated and there did not appear to be a strong emphasis on education in the home. On the average, their fathers did not enjoy high occupational status positions. In short, apparently lacking role models in the family that encouraged and rewarded the attainment of higher educational degrees, these Scholars have adopted educational aspirations that are not commensurate with their intellectual capabilities.

Some Graduate Work. This group of males had much in common with those who had already completed their doctorate or professional programs by 1964. In fact, those who had finished by the time of this followup may have been able to

accomplish this to some extent because of the types of programs they selected. Some programs simply take longer to finish than others.

Nevertheless, several family background factors suggested that these Scholars were not as oriented toward educational and intellectual pursuits as those of the most educationally advanced Scholars (e.g., parents' education, occupational status, income, parental involvement in study groups, books in the home, etc.). However, these Scholars were ambitious and they had high aspirations.

Another point should be made in reference to this group. Their zest for life as well as their great concern over intellectual and social matters cannot be understood from a perusal of statistical tabulations. Judging from the nature of their questionnaire responses, the single most important goal of most is to find an interesting and worthwhile role around which they can plan their lives. Thus, their careers are a matter of highest importance since they seem to recognize that what they do occupationally will serve as the center upon which many of their hopes and goals rest. At the time of this survey, almost all had career commitments and a high percentage expressed satisfaction with their career decisions.

Doctoral or Professional Degree Completed. These Scholars have flourished in intellectually fertile home backgrounds; their parents are the best educated of the male progress groups; almost two-thirds of their fathers work in the professions or own their own businesses; their parents reward and encourage intellectual achievement; and their parents are themselves engaged in numerous kinds of educational and intellectual activities. In this atmosphere these Scholars have developed habits and patterns of behavior that contribute to academic and intellectual excellence. In particular, they have high vocational aspirations; and their rapid progress indicates that they are industrious,

persevering, and motivated to excel. Although the CPI data suggests that they have somewhat more domineering characteristics than other male Scholars, in general they appear quite emotionally stable.

Female

No BA-BS Degree. These women did not lack in scholastic potential and they did extremely well in high school, but they apparently had neither the interest nor temperament necessary to continue their scholastic excellence in college. As with the least successful male Scholars, home background and related socioeconomic factors appeared to contribute toward their mode of reacting to the collegiate situation. Although their fathers were not as well educated as the fathers' of women doing graduate work, their financial situations were considerably better. It may be inferred that their home atmospheres emphasized "practical" aspects more than "intellectual" ones.

These women did not seem to be strongly career oriented. None were employed in career fields at the time of the last followup; in fact, over half of them expressed no vocational plans at all. While some may attempt later to combine homemaking and vocational careers, it is likely that their efforts will lack the vitality and intensity of the more career centered, achievement oriented women.

The lack of continued academic success in college may have contributed to adjustment problems. Personality test data revealed that over the span of their collegiate years they became more confused and unhappy. Self-ratings showed that they were aware of their intellectual decline.

BA-BS Degree Only. About 25 percent of the women were in this category. Thus, while they had not attempted graduate work by 1964, they at least completed the primary objective of the Merit Scholarship Program. Most of them seemed to be relatively satisfied with their progress, although over 50 percent wanted to obtain higher degrees. Over 80 percent were homemaking, employed in their career fields, or still in college.

Over three-fourths of them were married and in general they showed no signs of avoiding the responsibilities of motherhood. Many, in fact, expressed delight in assuming family obligations and others indicated that they planned to begin their families as soon as it was feasible. Although this meant of course that their careers were interrupted, few seemed to view this as an added burden.

In the coming years it will be interesting to see how much additional education these bright women are able to get, and how they will be able to manage both a family and career. It will also be interesting to ascertain whether their career achievements match those of women who have been able to complete their education more rapidly.

Some Graduate Work. Compared with the average of all other progress groups, males included, the homes of these Scholars seemingly provided a superior climate for pursuing intellectual excellence. About 60 percent of both parents were college graduates, many of whom were still actively involved in scholarly activities, and their homes were well stocked with educational and learning materials. Scholarship was apparently both encouraged and rewarded.

Under these circumstances, these females assumed the role of scholars themselves. Almost two-thirds aspired to doctoral level training in order to fulfill their career ambitions.

The CPI data implied that these women were reluctant to adopt the masculine aggressiveness of the most educationally successful males. In contrast they appeared more passive and methodical, but cooperative, conscientious, and industrious. These characteristics were noted both at the time of their admission to college as well as six years later. This may prove to be a problem for some in implementing and carrying out their career plans.

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4. Study of College Environments Using Path Analysis, by C. E. Werts.

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