

BIRTH-ORDER, PERSONALITY AND PERFORMANCE AT THE AIR FORCE ACADEMY¹

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On the basis of previous work by various investigators (2, 3, 5, 6), the present study was designed to test the following hypotheses about firstborns: (a) They will score higher on the Edwards Personal Preference Schedule (EPPS) need for Affiliation scales (6), and need for Achievement scales (5) than other birth-order groups. (b) They will score higher on the College Entrance Examination Board's (CEEB) verbal aptitude portion (3). (c) They will score lower on peer ratings for leadership ability etc. (7).

METHOD

Subjects. The *Ss* were 1023 Air Force Academy freshman cadets enrolled in Basic Psychology. To test reliability, the data were retained separately for Group 1 ($N = 574$) enrolled in the fall semester 1969, and Group 2 ($N = 449$) enrolled in the spring semester 1970. Each group was categorized into: only children, firstborns, second-borns with younger siblings, later-borns (except seconds) with younger siblings, and last-borns with older siblings.

Procedure. As in the previous studies (4, 5, 6) the EPPS was used as personality test; it was administered to all *Ss* in one large session for each of the two groups, just prior to their first semester at the Academy. The aptitude measure was the CEEB, which scores were obtained from the application records. The peer ratings were rendered at the end of the first semester by classmates who lived in the same dormitories as the *Ss*. The ratings were on leadership, personality, compatibility, etc., the total of these ratings being the scores. These ratings are a yearly routine.

For each dependent variable a one-way analysis of variance was conducted, using the five birth-order categories as the independent variables. The design also included multiple *T*-tests for mean differences between independent variable levels.

RESULTS AND DISCUSSION

For the EPPS variables of need of Achievement and need of Affiliation the variance analysis showed no significant differences between groups. The *T*-tests showed few significant differences between ordinal positions, but none of these differences were found in both groups. These results are contrary to those expected from hypothesis *a*. Factors that could account for this outcome are that our study was not conducted under stress conditions and our sample consisted entirely of a preselected group of men.

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The CEEB verbal scores differed significantly for both groups ($p < .05$) on the variance analysis, while the mathematics portion of the test showed almost no difference. The means and standard deviation of the CEEB scores are presented in Table 1. Multiple T-tests for the verbal scores show: In Group 1, only children scored significantly higher than all other categories except firstborns; in Group 2, firstborns scored significantly higher ($p < .01$) than second- and last-borns. Although not identical replications, these differences do support the hypothesis that only children and firstborns score higher on this particular aptitude test. The results for verbal scores for firstborns are in accordance with the findings of Altus (2).

TABLE 1. MEAN SCORES AND STANDARD DEVIATIONS FOR CEEB SCORES AND PEER RATINGS

Variable	Sample group	Birth-order categories				
		Only	First borns	Second borns	Later borns	Last borns
CEEB score (verbal)	1 M	609.43	586.01	574.59	577.12	566.54
		57.77	63.86	66.88	62.77	66.22
	2 M	576.59	582.02	564.54	567.15	555.46
		57.47	62.49	56.98	57.27	69.53
CEEB score (math)	1 M	666.52	665.67	659.04	663.67	665.93
		59.60	60.93	60.73	60.24	71.43
	2 M	647.12	662.00	665.90	667.73	649.32
		61.75	58.56	52.81	47.49	57.13
Peer ratings	1 M	3499	2911	2811	2918	2768
		1403.60	1253.20	1113.40	1167.30	1174.50
	2 M	3386	3096	2669	2858	2814
		1033.06	1166.98	1121.71	1085.63	1155.42
N = 574	1	20 3%	243 43%	186 32%	91 16%	34 6%
N = 449	2	13 3%	178 40%	141 31%	71 16%	46 10%

On the peer ratings the variance analysis showed little difference for Group 1, while a very significant difference ($p < .01$) was found for Group 2. Means and standard deviations of these ratings are also included in Table 1. The T-tests showed for Group 1 that only children scored significantly higher ($p < .05$) than the other categories despite their small number. In Group 2, only children again scored highest, and firstborns were also higher than later-borns ($p < .05$).

These last findings directly contradict Schachter's hypothesis (7) that firstborns are less popular than later-borns. A possible

explanation for this may be that Schachter's sample was undoubtedly more representative of the general population, where it may hold that only children and firstborns are less popular. Our *Ss*, however, were preselected for being highly successful in life. We may thus assume that representatives of all the birth-order positions were the "favorable cases" of their categories. Thus our only children may have had more practice and experience in making friends outside the family because there were no peers at home. The firstborns may have arrived at a general big-brother attitude. To quote Adler, who astutely described the relationship of the various birth-order positions to personality, they may have developed "a striving to protect others and help them . . . look after them, teach them, and feel themselves responsible for their welfare. Sometimes they develop a great talent for organization. These are the favorable cases" (1, p. 378).

SUMMARY

The *Ss*, 1023 Air Force Academy freshmen, were administered the EPPS, the CEEB verbal and mathematical scales, and given peer ratings on leadership and other personality factors. The results were tabulated by five birth-order categories. No birth-order effect was found regarding EPPS scores. On the CEEB, only children and firstborns received significantly higher verbal scores. On the peer ratings only children and firstborns also received significantly higher scores—in this case contrary to Schachter's previous results. Possible interpretations are given.

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