

## APPLICATION OF THE BERNREUTER INVENTORY OF PERSONALITY TO HIGHLY INTELLIGENT ADOLESCENTS\*

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### PREVIOUS APPLICATIONS OF THE INVENTORY

Since its publication in 1931 (1) the Bernreuter inventory of personality has been applied to various groups, usually with results that correspond somewhat positively with indications from other sources. For instance, Pintner (13) and Welles (16) found that a group with impaired hearing reacted with sub-average self-sufficiency scores. Bernreuter (2, 4) found men to be more self-sufficient than women, and "differences between various student groups who have experienced various degrees of home supervision and of social participation have been shown to be reliable, in the expected direction." Stagner (15) applying the inventory to 250 Wisconsin freshmen, concluded that its validity is "high" for *B1-N* and *B2-S*, and "good" for *B4-D*, as measured against personal interviews. Dodge (6) found salespersons to make higher scores than clerical workers, on *B4-D*, as might be expected.

Recently, Flanagan (7) using factor analysis, claims that only two categories can be set up from the items in the Bernreuter, of sufficient independence and consistency to sustain themselves. These Flanagan calls "self-confidence" and "sociability." Lorge (10) at first finding that Flanagan's scoring keys were not capable of setting up the two categories claimed, later discovered fundamental errors in his own work, and agreed that the Flanagan keys "are both independent and consistent" (11).

It is thus apparent that the items chosen by Bernreuter are of considerable effect for eliciting independent and consistent modes of response by various methods of scoring, and that a degree of validity is suggested by the correspondence between results obtained by the inventory and from other sources, as respects groups studied.

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## METHOD AND SUBJECTS OF THE PRESENT STUDY

The data of the present study were obtained early in 1933, the subjects being 36 boys and 19 girls, of the average age of 18 years 6 months. The IQ's (*S-B*) of all had been taken in early childhood (9). The group ranged from 135-190 IQ (*S-B*), with a median at about 153 IQ (*S-B*). All but four of these young persons were Jewish, a factor which must be considered as of possible consequence (8, 14), but which cannot be evaluated properly from anything at present in scientific literature.

The inventories were taken and scored by the investigators, in person. All subjects had been personally known since childhood to the senior investigator.

The method of scoring follows Bernreuter (1), three categories only being found of sufficient independence to warrant recording.

## RESULTS

The summary of results appears in Table 1. The highly intelligent are less neurotic, more self-sufficient and less submissive, as a group, than are the populations with which they are comparable. This divergence from the norms is found both for boys and for girls of the highly intelligent group, but it is much more pronounced for the boys.

Table 2 gives the detailed facts for individuals. To one who has known the characteristics and the careers of these persons for fifteen years, the correspondence between what is found on the inventory and what is found in the actual lives is interestingly close. Boy 13, for instance (note extremely high scores for self-sufficiency and dominance), took ship on his own initiative as soon as he was twenty-one years old, and sailed around the world as an ordinary seaman, returning to his post in the financial district of New York when the journey was completed. Boy 35 is a well-known player in metropolitan and sectional chess tournaments, and was able to meet seasoned players when he was fifteen to seventeen years old (note high scores for self-sufficiency and dominance). Boy 29 entered college at 14 years of age, "held his own" with the older students, earned money throughout his course, graduated at eighteen years of age with Phi Beta Kappa, and won a prize for research, in

TABLE 1  
 SHOWS GROUP RESULTS FOR HIGHLY INTELLIGENT BOYS AND GIRLS, GIVING EVIDENCE THAT SUCH GROUPS ARE MUCH LESS  
 NEUROTIC, MUCH MORE SELF-SUFFICIENT AND MUCH LESS SUBMISSIVE IN ATTITUDE THAN COLLEGE STUDENTS OR  
 ADULTS IN GENERAL ARE, ACCORDING TO THE CATEGORIES AND NORMS SET UP BY BERNREUTER

Statistical categories	B1-N Neurotic Tendency			B2-S Self-Sufficiency			B4-D Dominance-Submission		
	Highly intelligent boys	College norm group	Adult norm group	Highly intelligent boys	College norm group	Adult norm group	Highly intelligent boys	College norm group	Adult norm group
Number	36	427	86	36	427	99	36	427	100
Mean	-104.9	-52.9	-69.3	54.5	24.9	38.8	87.4	46.3	52.7
$\sigma$	56.7	85.2	76.3	42.3	54.0	52.4	44.6	67.4	61.8
$\sigma$ Mean	9.4	4.1	8.2	7.0	2.6	5.3	7.4	3.3	6.2
$\sigma\sigma$	6.7	2.9	5.8	5.0	1.8	3.7	5.2	2.3	4.4
$\sigma$ diff. ms. D		10.2	12.5		7.5	8.8		8.1	9.6
$\sigma$ diff.		5.1	2.8		3.9	2.1		5.1	3.6
Median	-112.0	-70.0	-75.0	54.5	25.0	35.0	98.1	45.0	55.0
Number	19	317	123	19	317	126	19	317	130
Mean	-45.0	-39.6	-34.2	52.0	6.9	16.8	46.5	33.1	19.2
$\sigma$	65.7	78.9	80.6	51.7	55.7	55.6	55.5	63.5	65.5
$\sigma$ Mean	15.1	4.4	7.3	11.9	3.1	5.0	12.7	3.6	5.7
$\sigma\sigma$	10.7	3.1	5.1	8.4	2.2	3.5	9.0	2.5	4.1
$\sigma$ diff. ms. D		15.7	16.8		12.3	12.9		13.2	13.9
$\sigma$ diff.		.04	.64		3.7	2.7		1.0	1.96
Median	-42.6	-40.0	-30.0	52.0	5.0	0.0	40.7	33.0	15.0

TABLE 2

SHOWS INDIVIDUAL DATA FOR HIGHLY INTELLIGENT BOYS AND GIRLS, GIVING EVIDENCE THAT SUCH PERSONS ARE MUCH LESS NEUROTIC, MUCH MORE SELF-SUFFICIENT AND LESS SUBMISSIVE THAN COLLEGE STUDENTS IN GENERAL ARE, ACCORDING TO THE CATEGORIES AND NORMS SET UP BY BERNREUTER

Subject	Age	1933 Alpha score	1922 IQ (S-B)	Highly intelligent boys Bernreuter scores			Percentile status by college norms		
				B1-N	B2-S	B4-D	B1-N	B2-S	B4-D
1	19- 7	210	190	-114	+ 86	+ 9	26	87	31
2	18- 7	184	149	-220	+ 27	+133	+ 1	50	94
3	19- 9	198	135	-112	+ 43	+133	29	64	94
4	18- 9	195	154	-169	+ 80	+ 41	7	85	46
5	19- 4	207	156	- 14	+ 18	+ 27	70	46	37
6	18- 4	175	146	- 39	+ 37	+108	62	61	84
7	18- 6	183	141	- 30	- 14	- 8	66	21	19
8	20- 0	200	156	- 43	+ 33	+ 31	60	57	40
9	19- 8	185	137	- 58	- 4	+ 36	54	27	43
10	19- 0	194	156	- 50	+ 39	+ 19	58	61	35
11	18-10	193	142	- 54	+127	+104	56	96	82
12	18- 3	188	172	- 66	- 31	+ 63	52	14	61
13	19- 5	194	171	-206	+121	+120	+ 1	95	88
14	17-11	199	154	-155	+ 59	+106	10	74	82
15	19- 6	186	157	-145	+ 1	+ 76	14	31	67
16	18-10	190	135	-138	+ 89	+132	16	89	97
17	17- 9	191	166	-125	+113	+ 88	22	94	75
18	19-10	193	168	-112	+ 45	+119	29	64	88
19	18- 9	137	141	- 74	+ 55	+ 84	48	71	73
20	18- 6	205	141	-172	+113	+115	7	94	86
21	19- 2	187	149	+ 28	- 2	+ 11	85	31	31
22	18- 5	183	163	-127	+ 89	+135	22	89	94
23	19- 3	192	162	-138	+ 90	+108	16	89	2
24	18- 8	167	135	-129	+ 82	+101	20	85	80
25	16- 7	191	167	- 48	+117	+ 50	58	94	52
26	19- 2	193	175	-143	+ 55	+132	14	71	92
27	19- 2	183	139	- 52	+ 62	+103	58	74	82
28	19- 9	175	138	- 80	+ 9	+ 96	45	38	77
29	18- 7	198	168	-141	+ 70	+ 56	16	80	55
30	19- 6	196	140	- 65	+ 40	+ 92	52	61	75
31	19- 1	191	152	-143	+ 24	+121	14	50	88
32	20- 1	182	141	-115	- 9	+119	26	24	88
33	18- 1	187	149	-133	+ 80	+ 92	18	85	75
34	20- 4	189	150	- 93	+ 50	+ 99	36	68	80
35	18- 2	198	188	- 81	+104	+107	45	92	82
36	18-11	153	154	-213	+ 65	+202	+ 1	77	99+
Highly intelligent girls									
A	19- 0	191	141	+ 2	- 21	+ 52	72	31	60
B	18- 4	190	160	+ 5	- 42	- 13	72	20	24
C	19- 5	192	147	- 31	- 9	+ 5	56	38	36

TABLE 2 (continued)

Subject	1933 Age	1933 Alpha score	Highly intelligent girls				Percentile status by college norms		
			1922 IQ (S-B)	Bernreuter scores			B1-N	B2-S	B4-D
				B1-N	B2-S	B4-D	B1-N	B2-S	B4-D
D	19- 6	175	152	- 51	+ 52	+ 48	45	79	60
E	19- 1	197	167	- 54	+113	+104	43	97	88
F	19- 3	192	145	+ 1	+ 51	- 19	71	79	43
G	19- 2	189	157	- 19	+127	+ 12	62	98	39
H	19- 3	193	145	-170	+123	+142	2	98	97
I	18- 8	183	151	-166	+ 46	+125	3	76	94
J	19-11	171	137	-148	+ 78	+109	6	90	90
K	19-11	169	162	- 74	+ 4	+107	35	49	88
L	19- 0	168	154	- 36	+ 42	+ 31	51	73	48
M	19- 7	171	144	+ 31	+ 2	+ 15	82	45	41
N	19- 3	194	164	- 35	+127	+ 36	51	98	52
O	18- 1	180	170	-114	+ 3	+ 82	17	49	76
P	18- 8	174	138	- 68	+ 77	- 56	37	89	62
Q	19- 4	187	157	- 43	+ 14	+ 9	47	56	39
R	19- 7	159	145	-124	+ 95	+ 95	15	93	84
S	18- 8	164	143	+ 57	+ 89	- 28	90	92	20

competition, in his junior year at medical school. Girl H won and held an appointment in public service, against heavy odds of sex, age, and general economic depression.

#### INTERPRETATION OF RESULTS

The indication from these data is that adolescents who as children tested from 135-190 IQ (S-B) are *much less neurotic, much more self-sufficient and much less submissive* than college students in general, or than adults of the mental caliber represented in the Bernreuter norms. It is to be noted in this comparison with the generality of college students, that from data so far collected, the median intelligence of the group here presented reaches about  $Q_3$  for college students, taking them the country over (12).

What, if any, weight must be attached to the fact that these adolescents are of Semitic stock is unknown. Boys 13, 30 and 35, and Girl K are not Jews, and their Bernreuter scores follow the trend of the group as a whole. This fact suggests that the divergence found on the Bernreuter is a function of deviating intelligence rather than of temperament associated with ethnic stock.

However, Garrett (8) using the Laird Personal Inventory  $B_2$ , of

the Colgate Mental Hygiene Tests found Jewish students at Columbia College to be "somewhat less stable emotionally as measured by the Personal Inventory," compared with non-Jewish students, though the difference was "not reliable."

Sward and Friedman (14) using the Bernreuter inventory, obtained higher scores on *B1-N* for Jewish students as a group than for non-Jewish, while in the other distinguishable categories, *B2-S* and *B4-D*, there were no reliable differences. These findings relate to students in Cleveland, Minneapolis-St. Paul and Pittsburgh.

Such studies suggest that in the investigation of principles of personality, the factor of ethnic stock cannot be considered negligible. The bearing upon the study here presented, if any, is to emphasize the effect of superior intelligence in reducing the scores in *B1-N*; since in the use of the Bernreuter inventory by Sward and Friedman (14), as well as in the use of Laird's inventory by Garrett (8), the Jewish students in general were found to produce exceptionally high scores, whereas our highly intelligent group of Jewish students produces lower scores on *B1-N* than are produced by college students in general, of the ethnic stocks found on the Pacific coast.

In all use of "inventories" it is not the actual conduct of the person that is elicited, but only his self-estimate of his conduct. It is merely self-estimated conduct of the highly intelligent that is reported here.

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