

PSYCHOLOGICAL CHARACTERISTICS OF THE EPILEPTIC¹

THOMAS O. HOOVER AND EDWIN E. WAGNER, Departments of Counseling and Psychology,
The University of Akron, Akron, Ohio 44325

Abstract. Forty noninstitutionalized epileptics were matched with 40 physically handicapped Ss individuals. A representative battery of psychological tests was administered to both groups. The epileptics and handicapped subjects were compared on 42 variables by batteries of psychological tests, 14 of which proved significant. When the significant predictors were intercorrelated and a Wherry-Doolittle multiple R derived, 3 variables were found to contribute unique variance the (WAIS) Wechsler Adult Intelligence Scale and full scale IQ, Rorschach 2c, and Hand Test CRIP. Results were interpreted as indicating that epileptics tend to resemble patients with organic brain syndromes and appear to be lacking in behavioral control and sensitivity to their condition.

OHIO J. SCI. 76(6): 259, 1976

Despite a considerable body of research, the question of whether or not there is an epileptic personality remains unresolved. Epileptics have been variously described as narcissistic, egocentric, lacking intimate friendships, lonely, solitary, pedantic, phlegmatic, explosive, hypersentimental, ambitious, stubborn, tenacious, emotionally impoverished, intellectually dull, verbally stereotyped, adhesive, fanatic, vain and ethically deprived (Eysenck, 1950; Fleck, 1935; Folsom, 1953; Harrower-Erickson, 1941; MacCurdy, 1916; Notkin, 1928; Sedman, 1966; Stauder, 1938; and Zimmerman *et al*, 1951). Although there are many and diverse opinions concerning the etiology and nature of the epileptic character, few experimental studies have served as the basis for these clinical formulations and Meyers and Brecker (1941) have concluded that;

"A critical examination of the numerous writings committed to this concept indicates that the author's convictions have been reached essentially by the method of subjective impression and that they have been reinforced largely by verbal reiteration and the implicit tendency to perceive the epileptic individual in terms of a well-established attitudinal set."

¹Manuscript received October 23, 1975 and in revised form May 27, 1976 (#75-62).

Guerrant *et al* (1962), in a review of the literature, were unable to find even one paper which met ". . . the most rudimentary standards of experimental design and reporting."

Another group of researchers has eschewed the ascription of a specific personality characteristic in the epileptic in favor of the position that epileptics are manifesting organic symptoms of disturbance or signs of a congenital constitutional defect (Clark, 1922; Clark and Cushing, 1931; Fedio and Mirsky, 1969; Ferguson, 1962; Ferguson *et al*, 1969; Gallagher *et al*, 1942; Gibbs and Stamps, 1958; Pond, 1952; Revitch, 1955). A similar, slightly watered down, view is held by those espousing the hypothesis that epileptics demonstrate certain traits which may be due at least partly to organic involvement (Altable, 1947; Bradley, 1951; Brady, 1964; Bridge, 1934; Davidoff *et al*, 1944; Deutsch, 1953; Folsom, 1953; Piotrowski, 1947; Schwartz *et al*, 1969; Taylor, 1969a, b; and Zimmerman *et al*, 1951). This lack of agreement among researchers can, to some extent, be attributed to methodological deficiencies such as the lack of suitable controls in epilepsy research (Folsom, 1953; Pruyser, 1953; Korman, 1960; Tizard, 1962; Heilbrun, 1962; Haynes and Sells, 1963; Hartlage, 1966). Other weaknesses in various studies can be pointed out, such as the use of institu-

tionalized populations (Bridge, 1934; Stauder, 1938; Meyers and Brecker, 1941; Landisberg, 1947; Piotrowski, 1947; Shaw and Cruckshank, 1957; Brady, 1964) and reliance upon subtests, tailor-made tests and other infrequently used instruments as measuring devices (Meyers and Brecker, 1941; Eysenck, 1950; Deutsch, 1953; Elizur, 1959; Loveland, 1961; Sappenfield and Ripke, 1961; Korman and Blumberg, 1963; Spreen and Benton, 1965; Tureen *et al.*, 1968).

Only a few studies have been conducted with a typical battery of psychological tests, which cover a spectrum of psychological functions, and, insofar as projective techniques are concerned, most of the research has been confined to the Rorschach with, to say the least, conflicting results. Rorschach himself believed that epileptics exhibited many color (C) responses (responses determined by the blot colors), yet Guirdham (1935) found color occurred less frequently, and Richards (1952) observed a decrease in color response by an increase in dark shading responses. Kogan *et al.* (1947) noted that many authors had failed to discriminate between personality patterns of epileptics and non-epileptics on the Rorschach. Furthermore, where differences have emerged, subsequent research has often revealed an opposing trend. Guirdham (1935) found responses determined by form of the blot ($F+\%$) to be lower in epileptics, but Richards (1952) observed an increase in $F+\%$. Stauder (1938) found high response to the entire figure (W), yet Lisansky (1948) obtained no discrimination for W. Stauder stated that rare details almost never occurred in epileptic protocols, while Zehrer (1951) discovered that rare details were generally higher in his epileptic group.

It seems possible that the inconsistent results surrounding the measurement of the epileptic personality may be due, in part, an artifact of methodological deficiencies such as small samples, lack of suitable controls and the use of unstandardized tests or test batteries. The present study attempts to deal with these problems by employing a large, relatively intact, group of epileptics, matched with an appropriate control group of handicapped persons and tested with a fairly

representative battery of psychological tests scored by an objective scoring system.

METHODS

Forty Caucasian subjects diagnosed as epileptics (E) by neurologists, general practitioners and psychiatrists were matched by sex, marital status, and age (within ± 4 years) to 40 physically handicapped (H) persons. Ages for the epileptics ranged from 17 to 43 with a median of 20.4 years and for the (HSs) handicapped individuals, ages ranged from 17 to 39 with a median of 19.0 years. Handicapped individuals were selected as controls to deal with the possibility that having a chronic illness could, *per se*, produce negative psychological reactions. As far as was known, none of the controls suffered from an organic brain syndrome, and their handicaps were strictly physical in nature consisting of afflictions such as rheumatoid arthritis, curvature of the spine, club foot and congenital absence of an arm. All of the control subjects had voluntarily sought assistance from the Akron Ohio Bureau of Vocational Rehabilitation and, in this respect, could be regarded as representing a non-institutionalized population.

The 80 subjects were administered what could be considered as a fairly standard battery of psychological tests consisting of the Rorschach, Hand Test, Bender-Gestalt, Draw-A-Person Test (DAP) and Wechsler Adult Intelligence Scale (WAIS). The following objective scores were obtained on each test: Rorschach and Hand Test—summary scores; Bender-Gestalt-Pascall-Suttell total raw scores; WAIS—Verbal, Performance and Full Scale IQs; DAP—an objective score of overall body image disturbance originally derived from Witkin *et al.* (1954) and further objectified by Fisher (1959). The epileptic and handicapped groups were compared on all the experimental variables utilizing the Wilcoxon matched-pairs signed-ranks test.

RESULTS AND DISCUSSION

Using the Wilcoxon matched-pairs signed-ranks test, two-tailed probabilities were derived and 14 variables were found significant beyond the .05 level (table 1). Since some of the variables may have been measuring similar or overlapping psychological functions (e.g., WAIS Verbal, Performance and Full Scale IQ's), an attempt was made to determine how much of the resultant significant variance was unique. The 14 variables which successfully differentiated the groups were dichotomized at the medians and converted into 4 cell contingency tables, and chi-square tests were computed. If the chi-square was significant at or beyond the .05 level, the variable was retained and phi's were subsequently calculated

TABLE I
Probability Values for 42 Variables Comparing Epileptic (N=40) and Physically Handicapped (N=40) Subjects.

Variable	Medians		p.*
	Epileptics	Controls	
Wechsler			
Full Scale	85.7	101.8	.000
Verbal	90.3	103.3	.000
Performance	82.3	102.7	.000
Draw A Person			
Body Image			
Score	09.9	07.6	.009
Bender Gestalt			
Pascall-Suttell			
Score	67.0	44.0	.000
Hand Test			
AFF	00.9	01.6	.490
DEP	00.0	00.0	.667
COM	01.9	02.2	.582
EXH	00.0	00.0	.711
DIR	01.2	02.3	.779
AGG	01.9	00.0	.542
INT	07.2	08.3	.772
ACQ	00.5	01.7	.322
ACT	02.8	03.0	.516
PAS	00.0	00.0	.322
ENV	03.8	04.8	.289
TEN	00.0	01.0	.226
CRIP	00.0	00.5	.005
FEAR	00.0	00.0	.401
MAL	01.2	01.8	.119
DES	00.0	00.0	.726
FAIL	00.0	00.0	.312
BIZ	00.0	00.0	.184
WITH	00.5	00.0	.136
R	12.0	13.8	.040
AIRT	06.6	05.9	.023
H-L	12.8	12.3	.503
PATH	03.4	02.2	.171
AOS	00.7	01.6	.056
RORSCHACH**			
R	10.7	12.9	.018
P	03.0	03.6	.180
AIRT	12.7	11.3	.009
W	05.3	07.7	.005
D	03.9	04.1	.024
M	00.6	01.4	.006
FM	01.1	01.4	.332
Σ C	01.4	01.2	.073
Σ c	00.0	01.4	.001
A%	56.0	57.0	.873
F+%	61.5	73.8	.069
F%	76.0	64.8	.430
Failures	01.0	00.0	.066

*Probability of 2 failed Wilcoxon matched pairs signed ranks.

**Only those variables occurring with sufficient frequency to permit meaningful statistical comparisons are reported.

among the criterion (epileptic versus handicapped) for all the predictors. A correlational matrix was then derived and used to compute a Wherry-Doolittle multiple R (table 2). The final R was .65 ($P < .01$). The test variable that offered the maximum prediction of the criterion was the Full Scale Wechsler, $R = .54$. The next variable yielding the most unique variance was CRIP, raising the R to .60, and the Wherry-Doolittle procedure added in Σc to produce a final multiple R of .65. None of the other 4 predictors contributed any significant additional variance.

To obtain some idea of the percentage of *hits* and *misses* that these three variables might afford when combined, they were again split at the medians. *Ad hoc* comparisons to see how much clinical prediction could be achieved with these findings were then conducted. Those individuals scoring above the median on the WAIS were given a weighted score of 2, those scoring above the median on CRIP were given a score of 1, and likewise those scoring above the median on Σc received a score of 1. Table 3 shows the range of scores. If the combined scores were again split at the median, a phi of .58 ($P < .001$) would be obtained and 79% of the cases would be correctly placed. It would appear that, from a clinical point of view, it would be possible to assign accurately about 4 out of 5 cases to either the epileptic or handicapped group on the basis of psychological test data.

Of the 14 significant variables, only 3 made unique contributions to the R, indicating some degree of overlap among the test scores. This commonality among the discriminating test variables connotes a general factor (affecting IQ, body image scores and graphomotor skills) which would appear to be related to defects produced by brain damage. These results would be in agreement with the school of thought which claims that epileptics tend to resemble organics. Epileptics as a group, however, may also manifest additional traits associated with the low Σc and the few CRIP responses. Epileptics do not seem to experience the normal anxiety denoted by the Rorschach light shading responses. Perhaps the

TABLE 2
Phi Correlational Matrix for Seven Psychological Variables Correlating Significantly With the Dichotomized Criterion (Epileptic vs. Handicapped)

Criterion	DAP	Bender	WAIS-FS	WAIS-V	WAIS-P	CRIP	Σc
Criterion	1.00	0.35	0.54	0.39	0.47	0.29	0.26
DAP*		1.00	0.45	0.15	0.56	0.15	0.26
Bender			1.00	0.50	0.14	0.03	0.18
WAIS-FS				1.00	0.74	0.01	0.03
WAIS-V					1.00	0.22	0.00
WAIS-P						1.00	0.11
Crip							0.00
Σc							1.00

*See methods for test types.

acting out behavior commonly attributed to epileptics is explicable in terms of a low anxiety level rather than labile emotions.

Epileptics gave fewer CRIP responses compared to the handicapped, indicating a lack of inferiority feelings and perhaps an absence of anxiety. Although epi-

TABLE 3

Distribution of Epileptic and Handicapped Assigned Weights According to Whether They Were Above the Median Scores on the Following Variables;

FS-WAIS IQ (+2), Crip (+1), Σc (+1)

	Weighted Scores				
	0	1	2	3	4
Epileptic	19	10	7	3	1
Handicapped	0	6	12	14	8

leptics are handicapped, they do not seem to be overly upset by their condition as compared to the handicapped sample. The epileptics studied may be lacking in a sensitivity to and awareness of their psychosocial status. Epileptics appear to be organic but, as group projective testing reveals, they may also be characterized by having reduced sensitivity and diminished behavioral controls.

LITERATURE CITED

Altable, J. P. 1947. Rorschach psychodiagnosis in a group of epileptic children. *Nervous Child* 6: 22-23.
 Bradley, C. 1951. Behavior disturbances in epileptic children. *J. Amer. Med. Asso.* 146: 436-441.
 Brady, J. P. 1964. Epilepsy and disturbed behavior. *J. Nerv. Mental Dis.* 138: 468-473.

Bridge, E. M. 1934. Mental state of the epileptic patient. *Arch. Neurol. Psychiatr.* 32: 723-726.
 Clark, L. P. 1922. A psycho-historical study of the epileptic personality in the genius. *Psychoanalytic Rev.* 9: 367-401.
 ——— and K. Cushing. 1931. A study in epilepsy. *Med. J. Record* 133: 27-31.
 Davidoff, E., G. M. Doolittle and V. I. Bonafede. 1944. Psychiatric aspects of epilepsy. *J. Nerv. Mental Dis.* 100: 170-184.
 Deutsch, C. 1953. Differences among epileptics and between epileptics and nonepileptics in terms of some memory and learning variables. *Arch. Neurol. Psychiatr.* 70: 474-482.
 Elizur, A. 1959. A combined test used for the diagnosis of organic brain condition. *Arch. Neurol. Psychiatr.* 81: 776-784.
 Eysenck, M.D. 1950. Neurotic tendencies in epilepsy. *J. Neurol. Neussurg. Psychiatr.* 13: 237-240.
 Fedio, P. and A. F. Mirsky. 1969. Selective intellectual deficits in children with temporal lobe or centrencephalic epilepsy. *Neuropsychologia* 7: 287-300.
 Ferguson, S. M. 1962. Temporal lobe epilepsy: Psychiatric and behavioral aspects. *Bull. N. Y. Acad. Med.* 38: 668-679.
 ———, M. Rayport, R. Gardner, K. Walter, H. Weiner and M. F. Reiser. 1969. Similarities in mental content of psychotic states, spontaneous seizures, dreams, and responses to electrical brain stimulation in patients with temporal lobe epilepsy. *Psychosomatic Med.* 31: 479-498.
 Fisher, S. 1959. Body reactivity gradients and figure drawing variables. *J. Consult. Psychol.* 23: 54-59.
 Fleck, U. 1935. Über religiösität der epileptiker. *Arch. Psychiatr. Nervenkrank.* 103: 122-135.
 Folsom, A. 1953. Psychological testing in epilepsy. *Epilepsia* 2: 15-22.
 Gallagher, J. R., E. L. Gibbs and F. A. Gibbs. 1942. Relation between the electrical activity of the cortex and the personality in adolescent boys. *Psychosomatic Med.* 4: 134-139.
 Gibbs, F. A. and F. W. Stamps. 1958. *Epilepsy Handbook*. Chas. C. Thomas, Springfield.

- Guerrant, J., W. W. Anderson, A. Fischer, M. R. Weinstein, R. M. Jaros and A. Deskins. 1962. Personality in Epilepsy. Chas. C. Thomas, Springfield.
- Guirdham, A. 1935. The Rorschach test in epileptics. *J. Mental Sci.* 81: 870-893.
- Harrower-Erickson, M. R. 1941. Psychological studies of patients with epileptic seizures. In Penfield, W. and T. C. Erickson (Eds.) *Epilepsy and cerebral localization: A study of the mechanism, treatment and prevention of epileptic seizures.* Chas. C. Thomas, Springfield. pgs. 546-574.
- Hartlage, L. 1966. Common psychological tests applied to the assessment of brain damage. *J. Project. Tech. Personal. Assess.* 30: 319-338.
- Haynes, J. R. and S. B. Sells. 1963. Assessment of organic brain damage by psychological tests. *Psychol. Bull.* 60: 316-325.
- Heilbrun, A. B. 1962. Issues in the assessment of organic brain damage. *Psychol. Rept.* 10: 511-515.
- Kogan, K. L. and Staff of the Baird Foundation Clinic. 1947. The personality reaction pattern of children with epilepsy, with special reference to the Rorschach method. *Asso. Res. Nerv. Mental Dis.* 26: 616-630.
- Korman, M. 1960. Some problems in the psychological diagnosis of brain damage: An overview. *Texas Rept. Biol. Med.* 18: 214-221.
- and S. Blumberg. 1963. Comparative efficiency of some tests of cerebral damage. *J. Consult. Psychol.* 27: 303-309.
- Landisberg, S. 1947. A personality study of institutionalized epileptics. *Amer. J. Mental Def.* 52: 16-22.
- Lisansky, E. S. 1948. Convulsive disorder and personality. *J. Abnormal Soc. Psychol.* 43: 29-37.
- Loveland, N. T. 1961. Epileptic personality and cognitive functioning. *J. Project. Tech.* 25: 54-68.
- MacCurdy, J. T. 1916. A clinical study of epileptic deterioration. *Psychiatr. Bull.* 187.
- Meyers, R. and S. Brecker. 1941. The so-called epileptic personality as investigated by the Kent-Rosanoff Test. *J. Abnormal Soc. Psychol.* 413-421.
- Notkin, J. 1928. Is there an epileptic personality make-up? *Arch. Neurol. Psychiatr.* 20: 799-803.
- Piotrowski, Z. A. 1947. The personality of the epileptic. In P. H. Hoch and R. P. Knight (Eds.) *Epilepsy; Psychiatric Aspects of Convulsive Disorders.* Grune and Stratton, N. Y.
- Pond, D. A. 1952. Psychiatric aspects of epilepsy in children. *J. Mental Sci.* 98: 404-410.
- Pruyser, P. W. 1953. Psychological testing in epilepsy. *Epilepsia* 2: 23-35.
- Revitch, E. 1955. Psychiatric aspects of epilepsy. *J. Med. Soc. N. J.* 52: 634-640.
- Richards, T. W. 1952. Personality of the convulsive patient in military service. *Psychol. Monogr.* 66: No. 346.
- Sappenfield, B. R. and R. J. Ripke. 1961. Validities of three visual tests for differentiating organics from schizophrenics and normals. *J. Clin. Psychol.* 17: 276-278.
- Schwartz, M. L., R. D. Dennerll and Lin Yi-Guang. 1969. Similarity of personality trait interrelationships in persons with and without epileptogenic cerebral dysfunction. *J. Abnormal Psychol.* 74: 205-208.
- Sedman, G. 1966. Being an epileptic. *Psychia. Neuro.* 152: 1-16.
- Shaw, M. C. and M. W. Cruickshank. 1957. The Rorschach performance of epileptic children. *J. Consult. Psychol.* 21: 422-424.
- Spreen, O. and A. L. Benton. 1965. Comparative studies of some psychological tests for cerebral damage. *J. Nervous Mental Dis.* 140: 323-333.
- Stauder, K. H. 1938. *Konstitution und Wesenänderung der epileptiker.* George Thieme, Leipzig (Review by L. Collins in *Rorschach Res. Exc.* 1944, 8: 38-41).
- Taylor, D. C. 1969a. Aggression and epilepsy. *J. Psychosomatic Res.* 13: 229-236.
- 1969b. Sexual behavior and temporal lobe epilepsy. *Arch. Neurol.* 21: 510-516.
- Tizard, B. 1962. The personality of epileptics: A discussion of the evidence. *Psychol. Bull.* 59: 196-210.
- Tureen, R. G., M. L. Schwartz and R. D. Dennerll. 1968. The Halstead-Reitan neuropsychological battery in brain-damaged, normal, and epileptic subjects. *Perceptual and Motor Skills* 27: 439-442.
- Wilkin, H. A., H. B. Lewis, M. Hertzman, K. Machover, P. B. Meissner and S. Wapner. 1954. *Personality through perception.* Harper, N. Y.
- Zehrer, F. A. 1951. Investigation of Rorschach factors in children who have convulsive seizures and in those who present problems of adjustment. *Amer. J. Orthopsychiatr.* 21: 292-301.
- Zimmerman, F. T., B. B. Burgmeister and T. J. Putnam. 1951. Intellectual and emotional makeup of the epileptic. *Arch. Neurol. Psychiatr.* 65: 545-556.