

The Eysenck Personality Inventory in Chronic Schizophrenia

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Common observation indicates that some chronic schizophrenics are more extraverted than others. According to Eysenck (1960, p. 11) neuroticism is a distinct factor from psychoticism; one would therefore expect it to manifest itself to a varying extent in different chronic schizophrenics. These considerations suggested that it would be of interest to discover whether extraversion and neuroticism in a sample of chronic schizophrenics, as measured by their extraversion and neuroticism scores on the Eysenck Personality Inventory (Eysenck and Eysenck, 1963), a modified form of the Maudsley Personality Inventory (Eysenck, 1956), were significantly related to their psychiatric symptoms and to other characteristics such as sex, age and work efficiency.

PROCEDURE

The Eysenck Personality Inventory was applied to 34 chronic schizophrenics, 19 males and 15 females. The mean age was 46.8 years, S.D. 10.9, range 27 to 60 years. Their mean duration of stay in hospital was 14.2 years, S.D. 7.3, range 4 to 28 years. All were in stable hospital employment and were under consideration for resettlement in the community outside.

Information on the psychiatric symptomatology of the patients was obtained from the senior nurses in charge, since the responsible psychiatrist had only recently taken them under her care and did not know them well. The senior nurses were closely acquainted with them and had discussed their symptoms with several successive psychiatrists. Data were obtained on the definite presence, doubtful presence or definite absence of 10 psychiatric symptoms: (1) formal thought disorder; (2) paranoid delusions; (3) somatic delusions; (4) other delusions; (5) hallucinations; (6) flatness of affect; (7) inappropriate affect; (8) excessive

speech; (9) limited speech; (10) motor disturbances.

Other characteristics considered, in addition to (1) sex, (2) age, and (3) duration of stay in hospital, were (4) age at leaving school, (5) occupational level before coming into hospital, (6) occupational level in hospital, (7) efficiency in hospital job, and (8) evidence of enterprise in hospital job. The occupational levels were assigned according to the official five-point classification used by the English Registrar-General. The patients' supervisors at work rated their efficiency on a six-point scale and their enterprise on a three-point scale.

It was decided that statistical comparisons would be most appropriately made by Mann-Whitney U tests, using the z formula corrected for ties (Siegel, 1956, p. 125). Two comparisons were made on each dimension for each symptom: (1) definitely present versus doubtfully present or definitely absent, and (2) definitely or doubtfully present versus definitely absent. Two comparisons were likewise made for the other characteristics, excepting sex. These followed the general model (1) having the characteristic in a high degree versus having it in an average or low degree, and (2) having it in a high or average degree versus having it in a low degree. As there were no *a priori* grounds in the great majority of comparisons for expecting differences in extraversion or neuroticism scores to be in one direction or the other, it was decided to assess statistical significance by two-tailed probabilities throughout.

RESULTS

Statistics summarizing the extraversion and neuroticism scores of the whole sample are set out in Table I. It will be noted that there is remarkably little skewedness in either dimension. It will also be noted that the present group

TABLE I
Summarizing Statistics of the E.P.I. Scores

Statistics	E.P.I. Scores	
	Extra- version	Neuro- ticism
Mean	21.1	16.8
Median	21.5	16.0
Range	8-32	0-46
Standard deviation	5.5	10.5
Ratio of Range to S.D.	4.5	4.5
Skewedness	-0.2	0.2

obtained a mean neuroticism score which is lower than the one reported by Eysenck and Eysenck (1963) for 89 schizophrenic patients (20.84).

The results of the comparisons in regard to psychiatric symptoms are set out in detail in Table II and of the comparisons in regard to the other characteristics in Table III. Out of 70 comparisons made, nine were significant at or beyond the .05 level, which is 2.6 times chance expectancy. It is reasonable therefore to discuss the statistically significant relations found as pointing in fact to a definite and not an accidental relationship. In order not to lose possibly relevant information it seems desirable to include also the three comparisons significant beyond the .10 but not the .05 level.

The significant results of the statistical comparisons may then be verbally expressed as follows. In *symptom* comparisons extraversion scores were higher in patients with definite absence of excessive speech or motor disturbances and lower in those with definite presence of excessive speech or definite absence of other delusions than paranoid and somatic. Neuroticism scores were higher in patients with definite presence of inappropriate affect and lower in those with definite absence of paranoid delusions, other delusions than paranoid and somatic, flatness of affect, or inappropriate affect. In the *other* comparisons extraversion scores were higher in patients whose education had not continued beyond 14 years. Neuroticism scores were higher in patients under 35 years of age and lower in patients whose hospital occupation was at least at the Registrar-General's level 3, i.e. the skilled level.

DISCUSSION

The inverse relation between extraversion scores and excessive speech is surprising. However, if the psychiatric concept of excessive speech bears some relation to what is measured by tests of vocabulary or ideational fluency (all involve the production of words) it is interesting to consider negative relations between vocabulary and extraversion (Al-Issa, 1964), and between ideational fluency and two tests of thought disorder (Al-Issa and Robertson, 1963). But the absence of significant relations between formal thought disorder and extraversion may have arisen simply from a divergence between the psychometric and the nurses' concept of thought disorder.

The mean neuroticism score reported in Table I demonstrates a low incidence of neurotic traits in schizophrenics as suggested by Eysenck (1960) and investigated by Cowie (1961) with children of psychotics. Again, relations between neuroticism scores and symptoms are difficult to interpret. Perhaps patients with socially more obtrusive symptoms register higher scores. While neither extraversion nor neuroticism scores had a significant relation to ratings of occupational efficiency and enterprise, it is noteworthy that patients in more demanding hospital employment had lower neuroticism scores than others.

The present results raise acute time-sequence or cause-and-effect problems. Do pre-existing levels of extraversion and neuroticism influence the nature of symptoms developed in chronic schizophrenia, or do some symptoms alter and others leave unchanged the patient's degree of extraversion and neuroticism? Are patients already lower in neuroticism selected for the more demanding jobs, or does the satisfaction of the demanding work lower the degree of neuroticism? Important questions such as these can be answered only by a long-term study in which the Eysenck Personality Inventory and similar procedures are applied repeatedly at different stages in the illness of chronic schizophrenics.

SUMMARY

The Eysenck Personality Inventory was

TABLE II

E.P.I. Scores and Psychiatric Symptoms: Mann-Whitney U Comparisons

Symptoms	Definitely Present (A)	Doubtful (B)	Definitely Absent (C)	Extraversion Scores				Neuroticism Scores			
				A v. (B+C)		(A+B) v. C		A v. (B+C)		(A+B) v. C	
				Two-tailed		Two-tailed		Two-tailed		Two-tailed	
				z	p	z	p	z	p	z	p
1. Formal thought disorder	14	10	10	1	—	1	—	1	—	1	—
2. Paranoid delusions ..	12	12	10	1·03	·30	1	—	1·35	·18	1·98	·05
3. Somatic delusions ..	6	17	11	1·57	·12	1	—	1·27	·20	1	—
4. Other delusions ..	7	17	10	1	—	1·77	·08	1·44	·15	1·92	·05
5. Hallucinations ..	13	12	9	1·42	·16	1	—	1	—	1·54	·12
6. Flatness of affect ..	18	7	9	1	—	1	—	1	—	1·76	·08
7. Inappropriate affect ..	8	16	10	1	—	1	—	2·22	·03	2·27	·02
8. Excessive speech ..	7	1	26	1·99	·05	1·96	·05	1	—	1	—
9. Limited speech ..	22	3	9	1	—	1	—	1	—	1	—
10. Motor disturbances ..	7	9	18	1	—	1·75	·08	1	—	1	—

TABLE III

E.P.I. Scores and Other Characteristics: Mann-Whitney U Comparisons

Characteristic	Number of Cases			Extraversion Scores				Neuroticism Scores			
	(A)	(B)	(C)	A v. (B+C)		(A+B) v. C		A v. (B+C)		(A+B) v. C	
	Two-tailed		Two-tailed		Two-tailed		Two-tailed				
	z	p	z	p	z	p	z	p			
1. Sex:											
Male (A), Female (B) ..	19	15	—	1	—	—	—	1·43	·15	—	—
2. Age:											
50 and over (A), 35 to 49 (B), under 35 (C) ..	18	11	5	1·31	·19	1·17	·24	1	—	2·56	·01
3. Duration of Stay in Hospital:											
12 years and over (A), 6 to 11 years (B), 5 years or under (C) ..	18	11	5	1	—	1·14	·25	1	—	1	—
4. Education:											
To 17 or later (A), to 15 or 16 (B), to 14 or under (C) ..	7	7	20	1·56	·12	2·46	·01	1	—	1	—
5. Previous Occupational Level:											
3 or above (A), 4 (B), 5 (C) ..	12	11	11	1	—	1·51	·12	1	—	1	—
6. Hospital Occupational Level:											
3 or above (A), 4 (B), 5 (C) ..	5	20	9	1	—	1	—	1·99	·05	1	—
7. Hospital Occupational Efficiency:											
Above average (A), average (B), below average (C) ..	16	9	9	1	—	1	—	1·28	·20	1	—
8. Hospital Occupational Enterprise:											
Definitely present (A), doubtful (B), definitely absent (C) ..	3	12	19	1	—	1	—	1·15	·25	1	—

applied to 34 chronic schizophrenics. Extraversion and neuroticism scores were related to the psychiatric symptoms and some other characteristics of these patients. The results are reported and discussed.

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