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The Stability of Scores on the Eysenck Personality Inventory in a University Population*

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The predecessor to the Eysenck Personality Inventory (E.P.I.) (Eysenck and Eysenck, 1964) was the Maudsley Personality Inventory (Eysenck, 1959) which has won wide popularity, and evidence has been presented for its high retest reliability for a number of different populations and over periods of time ranging from 1–2½ years (Marley and Bartholomew, 1959; Knowles, 1960; Ojha, Kelvin and Lucas, 1966).

At present rather less is known about the retest characteristics of the E.P.I. (Eysenck and Eysenck, 1964; Knowles and Kreitman, 1965). The present paper presents the results of a stability study with this instrument carried out over a period of two years on three samples of undergraduates at Sussex University.

Method

The test is similar to the M.P.I. in providing measures of neuroticism and extraversion, but differs in that a lie scale is included, thus increasing the total number of items from 48 to 57. In addition, two parallel forms are available, forms A and B, to enable retesting without the interference of memory factors. The test was administered to the total 1964 undergraduate intake at Sussex University (n = 551) during the first week of that academic year and retesting was carried out 2 years later on two sub-samples of this original population. One sample (n = 44) consisted of those who had become psychiatric patients during that two year period and were undergoing or had undergone some treatment at the University Health Centre. The other (n = 37) was a random sample of non-patients. As in an earlier paper by the present authors (Ryle and Lunghi, 1968) a psychiatric patient is defined as any student consulting with a psychological problem which was thought to warrant at least four treatment sessions in the University Health Centre, or admission to hospital.

An identical test-retest study was carried out on a sample of non-patients drawn from the 1965 intake. This sample was matched as far as possible with the 1964 sample, for initial N and E scores. It should be noted that in both cases the initial testing was in a group session, whilst the second was by postal administration. The non-response rate was approximately 20 per cent.

Results

It may be seen from Table I that the test-retest correlations in all three samples are lower than previous findings would lead one to expect. The neuroticism scores of patients had showed a significant increase (t = 3·37). However, this increase is not significantly greater in patients than in non-patients ($\chi^2 = 0{\cdot}16$).

Since the patients had presented at any time during the two year period a rank order correlation was carried out between the change in neuroticism and

Table I

Test-retest data for E.P.I. 1964 and 1965 intakes

		Test 1		Test 2		t	r
		Mean	S.D.	Mean	S.D.	ratio	
Non-patients	Neuroticism ..	9·9	4·25	11·2	4·80	1·79	·54
(n = 37) 1964	Extraversion ..	10·4	5·19	10·0	4·80	·60	·66
Patients	Neuroticism ..	10·9	3·97	13·0	4·11	*3·37	·48
(n = 44) 1964	Extraversion ..	11·9	4·42	9·9	4·50	1·55	·59
Non-patients	Neuroticism ..	10·4	4·16	9·8	3·69	N/S	·61
(n = 31) 1965	Extraversion ..	10·8	3·42	10·7	3·38	N/S	·67

(* $p < 0{\cdot}01$; two tailed)

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the time interval between the first consultation of a patient and the second E.P.I. administration. The correlation of ·33 obtained ($p < ·05$, one tailed test) suggests that the longer the time interval the smaller the increase (or the greater the decrease) in neuroticism.

A similar procedure, relating the change in neuroticism to the number of therapeutic sessions for each patient, showed no significant correlations.

Discussion

The stability coefficient of a test is a contaminated test parameter which reflects both the error variance assessed by the dependability coefficient (pure test parameter) and the function constancy coefficient reflecting change in the factor being measured and hence not a test parameter at all (Cattell 1967).

The dependability coefficient is derived from the constancy of the test scores with the same administration and scorers and under the same test conditions; in practice it is obtained by immediate retesting (to rule out function fluctuation). The dependability coefficient of the E.P.I. is known to be high, hence the low stability coefficient found in this study must be due to function fluctuation of the trait being measured. Neuroticism and extraversion as conceived by Eysenck are temperament traits and should hence be subject to little function fluctuation and there have been shown to be conditions under which this is true. To the extent that this is less true of the present results, some doubts must be cast either on the concepts of neuroticism and extraversion as stable temperament traits or on the capacity of the test to distinguish these traits from allied, less stable factors.

Summary

The present paper reports a test-retest study of the Eysenck Personality Inventory, using samples of patients and non-patients drawn from the undergraduate population at Sussex University. The results suggest either that neuroticism and extraversion are less stable traits than is usually claimed, or that the test is an unsatisfactory measure of these traits.

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