FORBES A. R. (1976) Some correlates of psychoticism revised and revisited. *N. Z. Psychologist* **5**, 26–36.
LORR M. and YOUNISS R. P. (1973) An inventory of interpersonal style. *J. Person. Assess.* **37**, 165–173.
LORR M., O'CONNOR J. P. and SEIFERT R. F. (1977) A comparison of four personality inventories. *J. Person. Assess.* **41**, 520–526.

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Average IQ values in various European countries

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The present study reports the averaged IQ scores in 21 European countries, collected during a period exceeding five years. An attempt was made to test a representative sample in all European capitals. It proved possible to do this in 16 capital cities, but in five countries it was necessary to choose the biggest or the second biggest town instead of the capital (Amsterdam, Bratislava, Hamburg, Zagreb and Zurich), the assumption being made that these cities would represent the whole country in a meaningful manner permitting of suitable comparisons to be made.

Participants of the study were men and women of 16 years or more, the assumption being made that the development of intelligence in most cases would be completed by that age. The scale used was Cattell's Scale CFT3, a non-verbal, culture-fair test which is particularly appropriate for comparisons of different nationalities. The test has high *g* saturations and is a good measure of general mental capacity, particularly fluid general ability (Weiss, 1971). The test was validated and standardized in the United States, and all comparisons are with the standardization figures.

The sample was based on the testing of one person for each 40,000 inhabitants, and the sample may be considered as stratified because three subgroups of the population were represented proportionally: (1) Men and women; (2) Age of participants (distribution was into six classes, beginning with the 16–20 year olds, and then going up by 10 year steps to the over 60s); (3) Socio-economic status was also considered, using a threefold classification.

Probands were ascertained by the investigators through the use of population statistics, and were then tested in groups of about 50 persons. The investigations were carried out by qualified psychologists and students of psychology who were carefully instructed to use identical criteria of testing. In each case the experimenters were of course native born in the country in question. For all sampling purposes the breakdown was based on the total population of the country, not on the particular town or city in which the test was carried out. Altogether 10,737 persons were tested.

Results are shown in Table 1, which gives the number of persons tested in each city, the mean IQ value, the standard deviation, and the standard error. The arithmetic mean for the total population tested was 102.2, with a standard deviation of 18.7. The population was 48.8% male and 51.2% female. The first five countries are

Table 1. IQ values in various European countries

	Country	Town	No. of subjects	Mean IQ	Standard deviation	Standard error of the mean
1.	Holland	Amsterdam	333	109.4	16.1	0.9
2.	Germany	Hamburg	1,572	109.3	22.4	0.6
3.	Poland	Warsaw	835	108.3	29.7	1.0
4.	Sweden	Stockholm	205	105.8	25.8	1.8
5.	Yugoslavia	Zagreb	525	105.7	34.1	1.5
6.	Italy	Rome	1,380	103.8	35.2	0.9
7.	Austria	Vienna	187	103.5	15.3	1.1
8.	Switzerland	Zurich	163	102.8	19.4	1.5
9.	Portugal	Lisbon	242	102.6	18.7	1.2
10.	Great Britain	London	1,405	102.0	19.3	0.5
11.	Norway	Oslo	100	101.8	11.6	1.2
12.	Denmark	Copenhagen	122	100.7	13.3	1.2
13.	Hungary	Budapest	260	100.5	21.4	1.3
14.	Czechoslovakia	Bratislava	363	100.4	25.9	1.4
15.	Spain	Madrid	848	100.3	34.7	1.2
16.	Belgium	Brussels	247	99.7	23.5	1.5
17.	Greece	Athens	220	99.4	25.6	1.7
18.	Ireland	Dublin	75	99.2	17.3	2.0
19.	Finland	Helsinki	120	98.1	26.6	2.4
20.	Bulgaria	Sofia	215	96.3	34.7	2.4
21.	France	Paris	1,320	96.1	27.1	0.7

significantly differentiated from the mean in a positive direction, the bottom two countries in a negative direction. The other countries do not differ from the mean significantly.

The mean of the total population is 2.2 points of IQ above the expected value of 100, which, while significant statistically, is so largely by virtue of the very large numbers involved. The actual value is small, and is probably due to the fact that people living in cities have generally IQ values several points above those living in the country.

In addition to the populations reported, a further study was made on the same principles of 225 probands in Akkra, the capital of Ghana. The mean IQ value of this population was 82.2; this is significantly below the value for the populations in Table 1. Nothing can be said here about the causes of this difference.

Several points regarding Table 1 may call for comments. It is interesting that the mean value for this very large European sample is very similar to the standardization value for the American sample; the small difference of two points is very likely due to the fact that all the testing in the European countries was done in large towns, so that there will almost inevitably be a slight over-estimation of the general IQ for that country. The standard deviation for the total European sample is also higher than that of the American standardization group, a fact which may be due to a better sampling in the present study.

The mean values for the 21 countries, and the standard deviations observed, differ more than one might have expected (particularly the latter), and in addition the mean values for the different countries do not agree with what one might have expected on the basis of previous studies. Thus France unexpectedly comes at the bottom of the scale, below countries like Spain, Greece, Ireland and Portugal, which previous research would have suggested as being more likely candidates for that position. It should be noted, however, that the great majority of differences between countries are not significant, and that the majority do not differ from the mean value significantly. It is thus possible that sampling errors may be responsible for the remaining statistically 'significant' results, a few such almost inevitably arising when a large number of comparisons are being made.

The most curious feature of the table is the very great divergence of standard deviations from their mean, ranging from 11.6 for Norway to 34.7 for Bulgaria and Spain. It is difficult to explain these differences; they must certainly cast some doubt on the comparability of sample choice in the different countries. It is exceedingly difficult to standardize conditions, instructions, and motivational factors over a large number of different testers, organisers, and subjects, and any differences along these lines may contribute materially to observed differences in the results. In spite of these well known difficulties it seems worthwhile to publish the results obtained, without claiming a high degree of accuracy. They may serve as a baseline against which future investigations may be carried out, and with which future results may be compared.

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Personality differences between different neurotic diagnostic groups*

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There has been much interest in the relationship between personality and psychiatric classification, as evidenced by the widespread use of the MMPI and other clinical questionnaires. Some of this interest stems from Jung's hypothesis that hysterics tend to be extraverted, while psychasthenics (nowadays more usually referred to as dysthymics) tend to be introverted (Eysenck, 1947, 1957). The present study reports some data relevant to this hypothesis.

The EPI (Eysenck Personality Inventory), Form B, was administered to groups of psychiatrically diagnosed patients, mostly outpatients (Eysenck and Eysenck, 1964), giving scores on neuroticism (N) and extraversion (E). The questionnaire was translated into Spanish by Sánchez-Turet (1973), and administered in the manner suggested in the Manual. Ages varied from 17 to 57 years, and the patients, mainly chronic, were mostly of lower middle class status. Table 1 indicates the types of patients administered the EPI, the numbers in the various groups, and the means and standard deviations of the groups on the N and E scales. Almost 300 patients in all were tested in this study.

Multivariate analysis of variance showed the differences between the groups to be highly significant ($P < 0.001$). Clearly, hysterics, phobics and dysthymics were the more extraverted groups, obsessives and depressives the more introverted; hysterics, dysthymics and reactive depressives were the most neurotic. A canonical variate analysis was carried out, similar in form to that reported by Rao & Slater (1949) of various neurotic groups. The first variate, accounting for 82% of the variance between groups, correlated 0.31 with N and 0.86 with E; the second variate, which accounted for 18% of the variance between groups, correlated 0.95 with N and 0.50 with E. As in the Eysenck and Claridge study (1962), the canonical variates are not collinear with the questionnaire factors; Fig. 1 shows the position of variates and factors, and the position of the various groups within this canonical variate framework. As already suggested by the correlations between variates and questionnaire scores, Variate 1 corresponds largely to E, Variate 2 to N.

The data show that while hysterics are indeed toward the extraverted end of the distribution, dysthymics (anxiety states) are not as introverted as other neurotic groups. In order to clear up some of the problems

* The original reports have been abridged and translated by the editor.