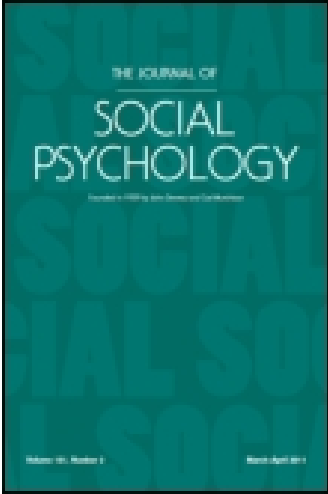


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THE STRUCTURE OF PERSONALITY IN AUSTRALIAN AS COMPARED WITH ENGLISH SUBJECTS*¹

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SUMMARY

A sample of 336 male and 318 female Australian adults was administered the Eysenck Personality Questionnaire (E.P.Q.), and the items were inter-correlated and factor analyzed. Results were compared with the results obtained from an English sample of 2312 males and 3262 females, using indices of factor comparison. Identical factors corresponding to the major personality dimensions of Psychoticism (P), Extraversion (E), and Neuroticism (N) were found, together with a largely independent L (Lie or dissimulation) scale, which has also been found to measure conformity. Australians seem to have significantly higher P scores, and significantly lower L scores, suggesting possible conformity with national stereotypes relating to Australians and English; such differences await replication before they can be taken very seriously.

A. INTRODUCTION

This paper is one of a series in which an attempt has been made to look seriously at the problem of national differences in personality (3, 10, 11, 12, 15, 16, 17, 20). Our purpose has been a dual one. In the first place, we have tried to investigate the crucial question of equivalence of traits in different populations; without such equivalence no proper national com-

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parisons are, of course, feasible. Our method is to intercorrelate inventory items for both populations being compared, factor analyze the resulting matrices, and rotate by Promax; we decided that identical personality factors were involved in the two populations if the indices of factor comparisons were in excess of .95. In the second place, we are of course interested in population differences, provided that the first requirement is met; failing the passing of the criterion, no comparison would be meaningful. As a possible third point of interest, we have looked at individual questions, and their comparative factor loadings; although a factor might be recaptured in a different population, certain items might lose their loadings, or go over into another factor. Such loss of loading or transmigration is of interest to social psychologists and requires explanation; furthermore, if a test is to be used in a novel cultural context, then it may be necessary to eliminate such items, and introduce more fitting ones.

Factor analysis provides an internal criterion of item transferability from one culture to another; an external criterion is provided by the emergence in the new culture of relations already observed in the old. Thus men in our samples have higher scores on Psychoticism (P) and Extraversion (E), women on Neuroticism (N) and Lie or dissimulation (L) (8). Criminals have higher scores on Psychoticism (P), Extraversion (E), and Neuroticism (N) (5, 9, 18). Psychotics have higher scores than normals on Psychoticism (P), neurotics on Neuroticism (N) and lower ones on Extraversion (E). Such external criteria should be satisfied in the new culture if the scale is to be considered applicable there as well as in the old culture. These methods may obviate some of the difficulties pointed out in Butcher and Pancheri (2) and Brislin, Lonner, and Thorndike (1).

A last point has been the problem of cultural and genetic factors in producing national differences in personality. Eysenck (6) has suggested a method of using genetic markers (in this case blood group polymorphisms) to give an indication of genetic differences, and the data so far available suggest that such factors may be operative; it is much too early to say whether this is indeed so, and whether the method can stand up to critical scrutiny.

The traits measured are those which extensive work by many personality theorists has shown to be the most prominent, and the most replicable, in personality research: namely, E (extraversion-introversion), N (neuroticism-stability), and P (psychoticism), added to which we have a dissimulation scale (L) for the detection of lying. Royce has discussed in

much detail the emergence of these three major personality dimensions from factor analytic investigations (19), and his major conclusion is as suggested above. The Eysenck Personality Questionnaire (E.P.Q.) was constructed to measure these variables specifically (8), but it was constructed on the basis of the responses of British samples of subjects; hence it is of considerable importance to ascertain to what extent the conclusions from these samples are really universal, and apply to other groups culturally, linguistically, and racially different from the British. The references cited to studies with Indian, Japanese, Yugoslav, Greek, Nigerian, and other populations suggest strongly that the major personality variables are international in their structure. The present study continues this exploration, using an Australian sample for cross-cultural comparison with our original British sample.

B. METHOD

The present study consists essentially of a detailed comparison of factor loadings on the E.P.Q. (8) between an English standardization sample and a group of 336 Australian men and 318 Australian women. Neither group is a random sample of their respective populations, but the method of selection was reasonably similar; in any case Eysenck and Eysenck (9) have shown that such variables as social class do not systematically correlate with the personality variable measured [i.e., Psychoticism (P), Extraversion (E), Neuroticism (N), or Lie Scale (L)]. The mean age of the Australian population was around 29 years for both sexes, which is not far removed from the English standardization group. The total English group consisted of 2312 males and 3262 females; of these 500 men and 500 women were used for the factor analysis. All the Australian *Ss* were used for the factor analysis.

Details of the method used for the factor analysis are given in Eysenck (9). Product-moment correlations were calculated between items, and principal components factor analysis performed. Rotation of four factors according to Varimax was followed by oblique rotation according to Promax; all analyses were performed separately for men and women. Factors were then compared between sexes and between countries by means of indices of factor comparison, with the use of a method outlined in Eysenck and Eysenck (7).

C. RESULTS

Agreement on the whole was high; items in the vast majority of cases loaded on the same factors for the Australian sample as they did for the English sample.³ Occasional low loadings do appear, but usually only for one sex rather than for both; this suggests that the low loading was due not so much to national differences in the meaning of the item, but rather to statistical artefacts which are likely to appear in such a large assembly of correlations.

Indices of factor comparison bear out this impression. Comparing Australian males and British males, they are, respectively, .933, .997, .994, and .993 for P, E, N, and L. For females, the values are .995, .996, .994, and .988. Australian males are very similar to Australian females, with indices of factor comparison of .956, .988, .990, and .998. These values, all but one exceeding the lower bound of .95, suggest that for all practical purposes we may consider the factors "identical."

Table 1 shows the reliabilities of the scores on the four scales; these are very similar to those obtained in England. So also are the intercorrelations between the factors given in the same table; all are quite small, even though some are significant, in view of the large numbers.

TABLE 1
INTERNAL RELIABILITIES OF FOUR SCALES OF THE EYSENCK PERSONALITY QUESTIONNAIRE
AND THEIR INTERCORRELATIONS FOR THE AUSTRALIAN SAMPLE

Scales	Males	Females
	<i>Reliabilities</i>	
Psychoticism (P)	.74	.65
Extraversion (E)	.86	.83
Neuroticism (N)	.88	.86
Lie (L)	.81	.79
	<i>Intercorrelations</i>	
PE	.03	.05
PN	.04	.09
PL	-.02	-.27
EN	-.12	-.28
EL	-.26	-.13
NL	-.06	-.03

³ See NAPS document No. 03721 for four tables showing the factor loadings of the original Psychoticism (P), Extraversion (E), Neuroticism (N), and Lie scale (L) items for the Australian men and women. Order from ASIS/NAPS, c/o Microfiche Publications, P.O. Box 3513, Grand Central Station, New York 10017. Make checks payable to Microfiche Publications and pay in advance \$5.00 for photocopies; \$3.00 for microfiche. Postage outside the U.S. and Canada is \$3.00 for a photocopy; \$1.50 for a fiche.

Table 2 gives the means and SDs for the various scales, for both the Australian and the English samples. As usual females in Australia have lower P scores, higher N scores, and higher L scores than males; they also have higher E scores, which is unusual. As regards the comparisons between Australian and English Ss, which may be justified by the fact that the same items seem to be equally applicable to both populations, we find that Australians have significantly higher P scores ($p < .001$ for each sex separately). The differences are quite sizeable, and the statistical significance is not entirely due to the large number of Ss. Appropriately enough, the English score above the Australians on the L scale, which might be interpreted as a measure of conformity rather than dissimulation (9); L and P usually show a negative correlation. Here the significance of the observed differences is $p < .01$ for the males, and $p < .001$ for the females. Australian females, but not males, have higher E scores than English Ss ($p < .001$), and Australian males, but not females, have higher N scores than English Ss ($p < .001$). It would seem premature to try and interpret these findings in absence of a replication study; the possibility that the principles of selection of the samples may have been somewhat different is an ever-present alternative explanation to any hypothesis that might be put forward.

D. CONCLUSIONS

The study here reported suggests that Australian and English populations are sufficiently similar to employ identical questions and personality inventories in both countries. Factor analysis of the intercorrelations between items in both countries, and for both sexes independently, gives results which are practically identical, as evidenced by the indices of factor comparison. It is suggested that the E.P.Q. can be used as it stands in

TABLE 2
MEANS AND SDs ON THE EYSENCK PERSONALITY QUESTIONNAIRE FOR THE AUSTRALIAN AND BRITISH SAMPLES

Scales	Australian				English			
	Males (<i>n</i> = 336)		Females (<i>n</i> = 318)		Males (<i>n</i> = 2312)		Females (<i>n</i> = 3262)	
Psychoticism	5.89	3.76	3.85	2.75	3.78	3.09	2.63	2.36
Extraversion	13.18	5.03	13.85	4.49	13.19	4.91	12.60	4.83
Neuroticism	11.41	5.73	12.33	5.26	9.83	5.18	12.74	5.20
Lie	6.16	4.14	6.47	4.02	6.80	4.14	7.73	4.18
Age	30.61	.67	27.01	.61				

Australia, with a high degree of probability that whatever the test measures in England, it will also measure in Australia. Differences in mean scores have been found, but their interpretation must await replication before they can be taken too seriously. If the main results of these comparisons are accepted, then it would appear that they bear out popular stereotypes of Australians as more aggressive and less conformist than the English.

The finding that identical factors are discovered in the analysis of the intercorrelations between the items of the E.P.Q. in these two countries is not perhaps as obvious and trivial as it may at first appear. Attempts to replicate Cattell's 16 PF in other countries, equally within the Western cultural circle, or even in the same country where they were first discovered, have been uniformly unsuccessful, indeed spectacularly so (4, 7, 13, 14, 21, 22, 23). The contradiction between the two inventories could not be clearer; the E.P.Q. has shown its factors to be replicable even in countries and cultures (e.g., Nigeria, Japan, Iran, India) where one might have expected the same sort of failure as has attended the factors of the 16 PF in countries much more similar in culture and tradition to the Anglo-American world. This finding thus supports the view expressed elsewhere (7) that second order factors, like Psychoticism (P), Extraversion (E), and Neuroticism (N) are much sturdier and resistant to dissolution than are primaries like Cattell's. For theoretical and applied work, this is an important conclusion.

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