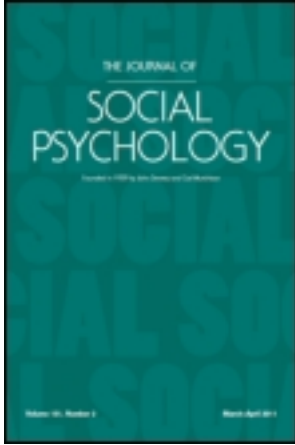


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Gender Differences in Extraversion, Neuroticism, and Psychoticism in 37 Nations

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ABSTRACT. Mean gender differences on Eysenck's three personality traits of extraversion, neuroticism, and psychoticism were collated for 37 nations. Women obtained higher means than men on neuroticism in all countries, and men obtained higher means than women on psychoticism in 34 countries and on extraversion in 30 countries. The relation between the magnitude of the gender differences and per capita incomes was not significant for any of the three traits.

IN THIS STUDY, we examined data for 37 countries on gender differences in Eysenck's three personality dimensions: extraversion, neuroticism, and psychoticism. Data from Britain showed that women tend to score higher than men on neuroticism and men higher than women on psychoticism; no consistent gender differences emerged for extraversion (Eysenck and Eysenck, 1975). Our objective in this study was to examine whether these gender differences are present in a large number of other countries and, if so, whether the magnitude of the gender differences is related to the extent of modernization of the country, as indexed by the per capita gross domestic product.

Method

The Eysenck Personality Questionnaire, first published by Eysenck and Eysenck (1975) for the measurement of extraversion, neuroticism, and psychoticism, was based on their work in Britain. Since the early 1980s, researchers have standardized the questionnaire by administering it to representative samples of

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the adult population in a number of countries; by the mid-1990s, the number of countries reached 37. The strategy in this research program was first to translate (where necessary) the questionnaire into the appropriate language and then to conduct an analysis, using varimax rotation, to ascertain whether the questions for the three traits loaded on the three factors in the same way as they did in Britain. By following this procedure, researchers typically found that most of the questions loaded as expected; there were, however, two or three exceptions for each trait. Nonloading questions were not considered suitable measures of the traits and were consequently discarded. Discarding them gave rise to the problem of slightly shorter questionnaires in the non-British versions than in the original British version. To overcome this difficulty, Barrett and Eysenck (1984), in an initial compilation of the international data, prorated all the scales to 30 items so that the means on the scales were comparable between countries. We followed the same procedure. In their compilation, Barrett and Eysenck reported data on gender differences on extraversion, neuroticism, and psychoticism for 24 nations; the references are given in their 1984 article. In the present study, we supplied data for an additional 13 nations, bringing our total to 37. For references for the additional 13, see the Appendix.

Results

Mean scores of men and women on the three personality dimensions are reported in Table 1, as well as each country's per capita gross domestic product (GDP) for 1985. We examined the statistical significance of the gender differences by dividing the differences by the standard error; a product of greater than 2 was taken as statistically significant at the 5% level. All the differences were statistically significant, except for those of Czechoslovakia, Iceland, and the United Kingdom on extraversion; Sri Lanka on neuroticism; and Nigeria and Uganda on psychoticism. Produce-moment correlations, calculated between the gender differences and the per capita GDP, were $-.28$ for extraversion, $.05$ for neuroticism, and $.14$ for psychoticism. None of these correlations was statistically significant.

Discussion

The most consistent result was, in spite of problems in translation and sampling, the gender difference on neuroticism: In all 37 countries, women obtained higher means than men. The difference is almost as consistent in the opposite direction for psychoticism: France was the only country where women had a significantly higher mean than men. This result was so anomalous that some kind of error in the data may be suspected. Curiously, in the two sub-Saharan African countries of Nigeria and Uganda, there was no difference between the sexes on psychoticism. On extraversion, men scored higher than women in 30 of the 37

TABLE 1
Male and Female Mean Scores on Extraversion, Neuroticism,
and Psychoticism for 37 Nations With Per Capita Income

Country	Number	Extraversion		Neuroticism		Psychoticism		GDP (\$US)
		Men	Women	Men	Women	Men	Women	
Australia	654	18.8	19.8	14.9	16.1	8.4	5.5	10,666
Bangladesh	1,075	19.4	18.6	11.6	13.0	4.6	3.8	170
Brazil	1,396	18.1	17.1	13.8	15.8	4.5	3.5	1,673
Bulgaria	1,038	19.1	18.1	12.6	17.3	4.7	3.6	1,416
Canada	1,257	18.3	17.8	11.5	14.0	4.7	3.8	13,698
China	1,000	14.5	13.0	13.8	15.1	7.6	5.9	227
Czechoslovakia	1,912	19.6	19.5	13.1	15.0	10.9	7.4	2,065
Egypt	1,330	19.0	18.1	16.0	18.7	4.8	4.0	1,365
Finland	949	16.7	15.8	13.2	16.0	5.7	3.7	11,064
France	811	17.4	18.1	12.3	17.9	5.1	5.9	9,343
Germany	1,336	18.6	18.2	12.5	14.8	6.9	5.4	10,266
Greece	1,301	21.3	19.5	16.6	20.0	6.2	4.7	3,382
Hong Kong	732	17.4	16.1	14.2	15.0	8.4	5.7	6,162
Hungary	962	17.5	15.6	12.7	16.5	4.7	3.0	1,937
Iceland	1,144	19.2	19.2	12.8	15.0	4.3	2.7	10,959
India	981	23.1	22.4	14.7	17.8	8.4	7.9	259
Iran	624	15.4	14.7	12.1	14.4	5.9	4.2	3,766
Israel	1,050	23.1	22.1	6.8	10.2	3.7	3.4	5,776
Italy	802	18.8	18.0	15.1	18.2	4.8	4.1	6,259
Japan	1,318	16.3	16.7	16.1	17.4	5.3	4.3	10,975
Korea	1,200	17.1	15.9	14.3	16.4	4.2	3.9	2,089
Lithuania	1,404	18.9	16.0	13.1	17.1	5.3	4.7	—
Mexico	988	20.4	20.9	13.3	15.0	5.2	3.8	2,247
Netherlands	876	17.7	17.1	9.7	13.3	3.3	2.4	8,620
Nigeria	430	24.8	24.1	7.8	11.0	3.6	3.6	625
Norway	802	19.2	18.1	8.9	11.8	2.8	1.7	14,092
Portugal	1,163	19.5	18.3	13.8	16.7	3.0	2.3	2,026
Puerto Rico	1,094	21.3	20.7	13.4	14.9	5.2	3.6	6,117
Romania	1,014	19.4	17.5	10.7	15.9	4.2	2.8	1,467
Russia	1,067	16.5	15.7	16.1	20.0	4.1	3.1	—
Singapore	994	18.5	16.4	11.6	14.4	4.7	4.0	6,843
Spain	1,030	17.6	16.6	14.7	17.8	3.1	2.8	4,262
Sri Lanka	1,027	19.4	18.0	12.0	12.2	5.2	3.3	358
Uganda	1,476	20.2	18.7	14.6	16.9	6.0	6.1	31
United Kingdom	1,198	18.0	18.1	12.8	17.2	4.8	2.9	8,069
United States	879	21.2	22.3	13.8	16.3	3.8	2.8	16,636
Yugoslavia	971	17.6	17.0	13.4	15.4	8.0	6.9	1,911

countries, but in 5 countries (Australia, France, Japan, Mexico, and the United States) women scored significantly higher than men. These inconsistencies mirror those found in various samples in the United States and Britain and probably reflect differences among samples.

We examined the relationship between the magnitude of the gender differences on the three personality traits and per capita incomes as indexed by GDP. We expected that the gender differences might be greater in more traditional, economically developing countries such as Bangladesh, Nigeria, and Uganda, where differences in norms for sex roles are generally greater, than in developed countries like the United States, Germany, and the United Kingdom, with their much greater equality between the sexes. However, the correlations between the magnitude of the gender differences and the national GDP were not statistically significant for any of the three traits.

The most striking feature of the results is the consistency of women's higher means on neuroticism and men's higher means on psychoticism in such a wide range of countries, all at such different stages of economic development. Also, our samples were drawn from all continents except South America. This consistency suggests the possibility that these gender differences may have a genetic basis, as proposed by Maccoby and Jacklin (1974) in reference to the apparent universality of the greater aggressiveness of men.

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APPENDIX

Studies Carried Out Since Barrett and Eysenck (1984)

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