# THE SOCIAL ECOLOGY OF INTELLIGENCE IN THE BRITISH ISLES, FRANCE AND SPAIN

Richard Lynn

University of Ulster

Londonderry, Northern Ireland

## Abstract

The social ecology of intelligence is concerned with the relation between the mean IQ of populations and a variety of social and economic phenomena. Data are presented for the British Isles, France and Spain. It is shown that there are regional variations in the mean population IQ in all three countries. These mean IQs are closely related to measures of intellectual achievement, income, unemployment and infant mortality. It is proposed that the intelligence didfferences are causal to the social and economic differences. Data are also presented to show that selective migration between regions have been an important factor in bringing about contemporary differences in regional mean IQs.

## Introduction

The social ecology of intelligence is concerned with the relation between the mean IQ of populations and a variety of social and economic phenomena. In my inquiries in this area I have worked with a three stage causal chain model in which it is envisaged that selective migration has given rise to differences in mean IQ between regions. These mean IQ differences are in turn partly responsible for regional differences in the output of people of intellectual distinction, per capita incomes, rates of unemployment and rates of infant mortality. The model is shown in diagrammatic form in Figure 1.

To spell out the model in a little more detail, it is suggested that over the course of centuries there has been a general tendency in many countries for some of the more intelligent individ-



M. P. Friedman et al. (eds.), *Intelligence and Learning*

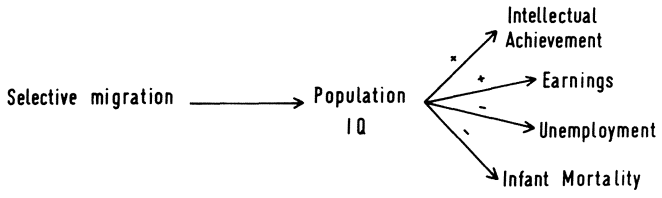


Figure 1

uals in the provinces to migrate to the capital city. Such individuals have been drawn by the attractions of wealth, status, intellectual stimulation and so forth which are available in capital cities. Many such individuals will have established homes and families in the capital cities and consequently their high intelligence will tend to pass down the generations through genetic and environmental mechanisms, leading over the course of time to significant differences in mean IQ between the population in the capital city and in the provinces. This is stage one of the path model shown in Figure 1.

In the next stage of the model it is suggested that the mean IQ differences between the regions are responsible for much of the variation in intellectual achievement, incomes, rates of unemployment and rates of infant mortality. It was first proposed by Galton that there would be a close association between the mean IQ of a population and its output of intellectually gifted persons and the expected association seems an obvious one. It is also proposed that a population with a high mean IQ would have higher average earnings and lower rates of unemployment and infant mortality. The reasons for these predictions are that intelligent individuals tend to have higher earnings, to be less prone to unemployment and to having an infant death in their families. Thus our expectations for the population differences are derived by regarding the populations simply as aggregates of individuals among whom these relationships are reasonably well established.

It is suggested that the model is applicable to regional subpopulations within nations, to districts within cities and possibly also across nations. There are thus quite a number of areas where the model could be tested. However, in this paper I shall be concerned only with data pertaining to the model from the regions of the British Isles, France and Spain.

## Fitting Data to the Model: The British Isles

We turn now to the question of fitting data to the model and consider first the British Isles. Here we have thirteen regions whose mean population IQs range from 102.1 in the London area to 96.0 in the Republic of Ireland. The data are shown fitted to the

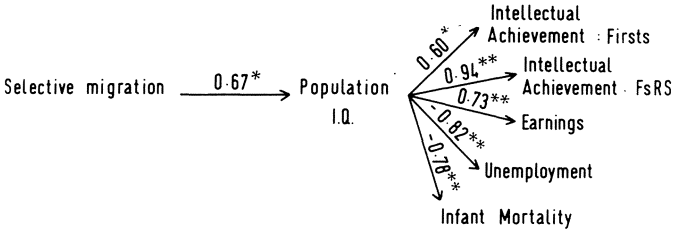


Figure 2

model in Figure 2, where it will be observed that all the predictions are fulfilled at statistically significant levels. The index used for selective migration is population increase over the period 1750--1950. This is considered a reasonable proxy for selective migration based on the assumptions that natural population increases are constant across regions and hence that differences in regional rates of population increase reflect migration in which there is a selective element. It has to be admitted that there are some assumptions in using this index and this is certainly the weakest of our variables.

The two measures of intellectual achievement are all first class honours graduates for 1973 expressed as a proportion of the total number of their age group in their region; and Fellows of the Royal Society, being all fellows born after 1911 expressed as a function of the populations in the regions recorded in the 1911 census. Data for income, unemployment and infant mortality are taken for the years 1959-61. A full description of the data is given in Lynn (1979).

## 2. France

The next case to be considered is France. The country is divided into 90 departments for which mean IQ data were reported by Montmollin (1958) derived from 257,000 male conscripts in the mid nineteen fifties. The index of intellectual achievement was membership of the Institut de France. The 253 members in 1975 were allocated to the regions where they were born and the numbers from each region expressed as proportions of the departmental population in 1974. Earnings, unemployment and infant mortality are taken for the years 1970-72. Selective migration was estimated in the same way as in the British Isles by taking the increase in population from 1801-54.

The French data are shown in Figure 3. All the predicted relationships are present at statistically significant levels with the exception of unemployment. It is suggested that the explanation

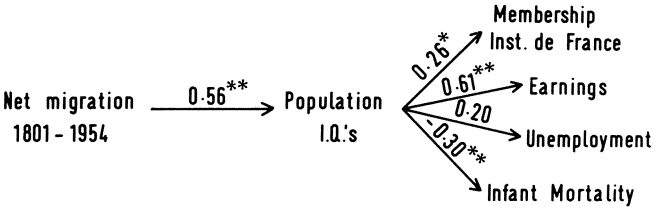


Figure 3

for this may lie in government subsidies to small farmers who would otherwise be unemployed, thus concealing the figures for natural unemployment in the French provinces.

## 3. Spain

Turning finally to Spain, our data is based on the 48 regions into which government agencies divide the country for the purposes of statistical compilations. IQ means for each region were calculated from the data of Nieto-Allegre et. al (1967) which gives results for approximately 130,000 Spanish conscripts into the armed services. An index of intellectual achievement was taken by using all Spaniards listed in World Who's Who and expressing these as functions of the populations in each of the regions. Data for mean regional incomes, rates of infant mortality and for illiteracy were also obtained from Spanish government statistics for 1970. Selective migration was estimated as in the case of the British Isles and France by taking population growth figures for the period 1900-1970.

The results for Spain are shown in Figure 4. It will be observed that they are less satisfactory than those for the British Isles and France in so far as there is no relationship between the measure of migration and mean population IQ, and the correlation between mean IQ and the index of intellectual achievement falls short of statistical significance. Possibly these less satisfactory results may arise because Spain does not have a single metropolitan city corresponding to London and Paris. While Madrid is of course the political and administrative capital, Barcelona is the most prosperous city in economic terms, characterised by both relatively high incomes and high mean population IQ. In spite of these possible distorting effects, relationships shown in Figure 4 between mean population IQ and income, infant mortality and illiteracy do appear consistent with the model.

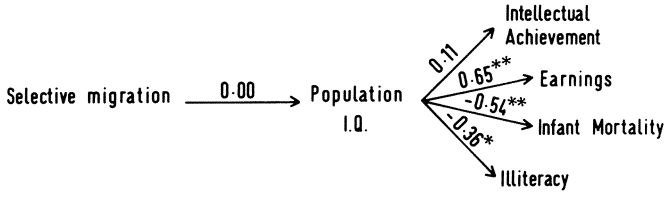


Figure 4.

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