

INTELLIGENCE

A Unifying Construct for the Social Sciences

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So it is that the gods do not give all men the gifts of race...neither good looks nor intelligence nor eloquence.

Odysseus, speech to the suitors of Penelope
from Homer's *Odyssey*.

Chapter 1

Introduction

1. Compartmentalization of the Social Sciences. 2. National Intelligence and Economic Development. 3. Criticism of National IQs. 4. A Progressive Research Program.

The physical sciences are unified by a few common theoretical constructs, such as mass, energy, pressure, atoms, molecules and momentum, that are defined and measured in the same ways and explain a wide range of phenomena in physics, astrophysics, chemistry and biochemistry. This has been beneficial for the development of the physical sciences, because it has allowed the transfer of concepts from one field to others. It has allowed interface subjects like chemical physics and biochemistry to develop their own insights and concepts on the basis of those already developed in their parent fields. Physics is the most basic of the natural sciences, because the phenomena of the others can be explained by the laws of physics. For this reason, physics has been called the queen of the physical sciences.

Hitherto, the social sciences have lacked common unifying constructs of this kind. The disciplines of the social sciences, comprising psychology, economics, political science, demography, sociology, criminology, anthropology and epidemiology are largely isolated from one another, each with their own vocabulary and theoretical constructs.

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Psychology can be considered the most basic of the social sciences because it is concerned with differences between individuals, while the other social sciences are principally concerned with differences between groups such as socio-economic classes, ethnic and racial populations, regions within countries, and nations. These groups are aggregates of individuals, so the laws that have been established in psychology should be applicable to the group phenomena that are the concern of the other social sciences.

Our objective in this book is to develop the case that the psychological construct of intelligence can be a unifying explanatory construct for the social sciences. Intelligence is measured by the intelligence test that was constructed by Alfred Binet in 1905. During the succeeding century it has been shown that intelligence, measured as the IQ (the intelligence quotient), is a determinant of many important social phenomena, including educational attainment, earnings, socio-economic status, crime and health. Our theme is that the explanatory value of intelligence that has been established for individuals can be extended to the explanation of the differences between groups, that have been found in the other social sciences, and in particular to the explanation of the differences between nations. Thus, we propose that psychology is potentially the queen of the social sciences, analogous to the position of physics as the queen of the physical sciences.

1. Compartmentalization of the Social Sciences

Although the contribution of intelligence to the understanding of many social phenomena has been known for several decades, such is the compartmentalization of the social sciences that this has rarely been recognized. Thus, in sociology, James Coleman's *Foundations of Social Theory* (1990) has been described as "the most important book in social theory in a long time" by the Nobel prize-winning economist Gary Becker, yet in

its 950 pages no mention is made of intelligence. In criminology, the significance of low intelligence as a factor in crime has been largely ignored. Wilson and Herrnstein (1985, p.155) observed a quarter of a century ago "Despite over forty years of confirmation, the correlation between intelligence and crime has yet to penetrate most of the textbooks or the conventional wisdom of criminology". Nothing had changed in the 1,246 page *Oxford Handbook of Criminology* that contains no mention of intelligence (Maguire, Morgan and Reiner, 1994). In epidemiology, numerous studies have shown socio-economic correlates of health such as mortality, obesity, accidents, lung cancer and stroke, but there has been virtually no recognition that much of these can be explained by intelligence until the recent work by a group of psychologists led by Ian Deary (Deary, Whalley and Starr, 2009).

In economics, it is accepted that earnings are significantly determined by *human capital*, a concept that can be defined as "the stock of knowledge and skills that enable people to perform work and produce economic value" (Stroebe, 2010, p. 661). Sometimes this construct includes cognitive ability, but very rarely is any mention made of intelligence. Still less is there any recognition in economics that differences in intelligence might contribute to national differences in economic development. For instance, Douglas North (2005), an economics Nobel prize winner, discusses the factors responsible for economic development and argues that the most important is "adaptive efficiency", defined as "a society's effectiveness in creating institutions that are productive, stable, fair and broadly accepted" but he does not consider the possibility that the intelligence of the population might determine its ability to create these institutions. Occasionally this possibility has been raised by economists but rejected. For example, in a keynote lecture with the title *Why isn't the whole world developed?* given in the 1981 conference of the American Economic History Association, Richard Easterlin stated that "I think we can safely dismiss the view that

the failure of modern technological knowledge to spread rapidly was due to significant differences in the native intelligence of their populations. To my knowledge there are no studies that definitively establish differences in, say, basic IQ among the peoples of the world" (1981, p. 5). More recently, the same assertion was made by the economists Erik Hanushek and Dennis Kimbo, who wrote "We assume that the international level of average ability of students does not vary across countries" (Hanushek and Kimbo, 2000, p. 1191).

Furthermore, the occasional attempts that have been to show that intelligence can explain social phenomena have encountered huge resistance from social scientists. This was most strikingly shown in the responses to Richard Herrnstein and Charles Murray's *The Bell Curve*, in which they showed that low intelligence is an important determinant of the social problems of the underclass, consisting of high rates of unemployment, welfare dependency, and teenage motherhood. Whole books appeared attempting to refute this indisputable analysis, such as *The Bell Curve Wars* (Fraser, 1995), *Inequality by Design* (Fischer, Hout and Jankowski, 1996), and *Intelligence, Genes and Success* (Devlin, Fienberg, Resnick and Roeder, 1997).

2. National Intelligence and Economic Development

Ten years ago we began our research program for the investigation of how far differences in intelligence can explain the differences in economic development between nations in our book *IQ and the Wealth of Nations* (2002). Our starting point was that it has been established that intelligence is a determinant of earnings among individuals, and hence that this association should also be present across nations. We searched for studies throughout the world in which intelligence tests had been administered, and found useable data for 81 nations. We calculated the results by setting the IQ in Britain at 100 (standard deviation =15) and the

IQs of other nations were expressed on this metric. The results showed that there are huge differences in the average IQs of nations, ranging from approximately 70 in sub-Saharan Africa, to approximately 100 in most of Europe and the countries colonized by Europeans in the last few centuries (the United States, Canada, Australia, New Zealand, Argentina, Chile and Uruguay), to approximately 110 in China, Japan, Korea, Singapore and Taiwan. We then showed that national IQs were correlated with per capita income (measured as real GDP, gross national product, per capita) at 0.73 (Lynn and Vanhanen, 2002, p. 89). This showed that 53 per cent of the variance in per capita in this group of nations is attributable to differences in intelligence. We then used the measured IQ of the 81 nations to estimate the IQs for a further 104 nations that were ethnically similar to those for which we had measured IQs. For example, we assumed that the IQ in Luxembourg would be the same as in the Netherlands and Belgium. This gave us IQs for all 185 nations in the world with populations over 50,000. We showed that for these 185 nations, IQs were correlated with per capita income (measured as real Gross Domestic Product, per capita) at 0.62. This is lower than the correlation for 81 nations, probably because there was some error in the estimated IQs. Nevertheless, the correlation is highly significant and shows that 38 per cent of the variance in per capita income in the nations of the world is attributable to differences in intelligence. To establish the validity of these national IQs, we showed that they are correlated at 0.88 with national scores on tests of mathematics and at 0.87 with national scores on tests of science.

In 2006 we published further evidence for this theory in our book *JQ and Global Inequality*. In this we presented measured IQs for an additional 32 nations, bringing the total number of nations for which we had measured IQs to 113. We showed that these were correlated with per capita income (measured as real GNI, gross national income) at 0.68 (Lynn and Vanhanen, 2006, p. 102). Following the method in our first study, we used the measured IQ of the 113 nations to estimate the IQs for an

additional 79 nations that were ethnically similar to those for which we had measured IQs. This gave us a total of 192 nations, comprising all the nations in the world with populations over 40,000. We found a correlation of 0.68 between national IQ and per capita income in the 113 nations for which they had measured IQs, and a correlation of 0.60 between national IQ and per capita income in the 192 nations. Once again, the correlation for the 113 nations' measured IQs is a little higher than for the larger 192 nation data set, and probably for the same reason that measured national IQs are more valid than estimated national IQs.

In our 2006 book we extended the analysis beyond economic development and showed that national IQs explain substantial percentages of the variance in national differences a number of other phenomena including literacy, life expectancy, and the presence of democratic institutions.

3. Criticisms of National IQs

We did not expect that our work would be immediately accepted and so it proved. Some of the reactions to it have been well summarized by Juri Allik, professor of psychology at the University of Tartu:

By analogy with many previous controversial discoveries, it is predictable that the first most typical reaction would be denial. Many critics are not able to tolerate the idea that the mean level of intelligence could systematically vary across countries and world regions. Neither are they ready to accept that from the distribution of mental resources it is possible to predict the wealth of nations. The next predictable phase is acceptance of the facts but denying their interpretation. The simplest strategy is to interpret the results as measurement error. A useful strategy is to discover a few small mistakes declaring that all the results are equally suspicious (2008, p. 707).

As Juri Allik predicted, a number of critics have rejected our work. Susan Barnett and Wendy Williams (2004) have asserted that our national IQs are "virtually meaningless", and Hunt and Sternberg (2006, pp. 133, 136) have described them as "technically inadequate... and meaningless". Others have criticised our national IQs as "highly deficient" (Volken, 2003, p. 411), and similar criticisms have been made by Astrid Ervik (2003, pp. 405-6), who asked "are people in rich countries smarter than those in poorer countries?" and concluded that "the authors fail to present convincing evidence and appear to jump to conclusions", and by Thomas Nechyba (2004, p. 1178) has written of the "relatively weak statistical evidence and dubious presumptions".

The answer to these criticisms is that our national IQs are highly correlated with national scores in tests of mathematics and science, as shown in detail in Chapter 3, as well as with a number of other economic and social variables, as documented throughout this book. If our IQs were meaningless, they would not be highly correlated with a wide range of economic and social phenomena.

4. A Progressive Research Program

Despite these criticisms, a number of social scientists have regarded our national IQs positively. Erich Weede and Sebastian Kampf (2002) have written that "there is one clear and robust result: average IQ does promote growth". Edward Miller (2002) wrote that "the theory helps significantly to explain why some countries are rich and some poor". Michael Palairt (2004) has written that "Lynn and Vanhanen have launched a powerful challenge to economic historians and development economists who prefer not to use IQ as an analytical input". Even Earl Hunt, who initially rejected our national IQs as meaningless, has more recently concluded that "in spite of the weaknesses in several of their data points Lynn and Vanhanen's empirical conclusion was

correct" (Hunt and Wittmann, 2008).

More generally, a number of scholars have welcomed our work on national IQs as opening up a new field in the social sciences. Our work has been described by Rindermann and Ceci (2009, p. 551) as

a new development in the study of cognitive ability: following a century of conceptual and psychometric development in which individual and group (socioeconomic, age, and ethnic) differences were examined, researchers have turned their attention to national and international differences in cognitive competence. The goal is to use cognitive differences to understand and predict national differences in a variety of outcomes: societal development, rate of democratization, population health, productivity, gross domestic product (GDP), and wage inequality.

A number of social scientists who have taken this positive view of our work have advanced this research program by showing that national IQs are significantly and substantially correlated with and contribute to the explanation of a wide range of economic, sociological, demographic and epidemiological phenomena. In the present book we develop this research program further by giving revised and updated measured IQs for 161 nations and territories, comprising all the major nations in the world. We give estimated IQs for an additional 41 smaller nations and territories, giving IQs for all 200 nations and territories in the world with populations over 40,000. These IQ data are given in Chapter 2. In each of the subsequent chapters we begin by summarizing studies of intelligence as a predictor of social phenomena among individuals; we then review studies showing that intelligence also predicts differences in these social phenomena across nations, and finally we present new data and analyses of the explanatory power of intelligence for the understanding of national differences.