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Academic Racism: Lynn's and Kanazawa's Ill-considered Theory of Racial Differences in Intelligence

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Introduction

This double review (of one book and one closely related article) is prompted by a response to my essay review¹ of *IQ and the Wealth of Nations* by one of the authors of the book, Tatu Vanhanen. Vanhanen responded to my review of his book with Richard Lynn in a private e-mail:

Dear Dr. Berhanu,

Thank you for your review of our book *IQ and the Wealth of Nations*. I would like to inform you that my colleague Richard Lynn has found a new study on intelligence in Ethiopia. It is: Aboud, F., Samuel, M., Hadera, A. & Addus, A. (1991). "Intellectual, social, and nutritional status of children in an Ethiopian orphanage." *Social Science and Medicine*, 33, pp. 1275-1280. This study is based on a sample of 134 children in an orphanage in Jimma tested in 1989. According to Richard Lynn, Ethiopia's national IQ would be 71 on the basis of this study. It is significantly higher than estimated in our book. It should be noted that there is a margin of error in all national IQ estimations.

I do not go to the details of your review, but I would like to emphasize that we do not suggest that poor countries should blame themselves for their poverty, which is significantly related to national IQs. Our point is that differences in national IQs reflect the evolved human diversity. Nobody is responsible for those differences, not rich nor poor countries. Such differences are consequences of evolution through natural selection, which is not controlled by anybody. Our message is that we should learn to accept the evolved human diversity and its consequences in social, economic and political conditions. This means that human ability to equalize human conditions is quite limited. We should learn to accept our limitations and learn to live with them. They reflect the endless diversity of life.

Sincerely,

Tatu Vanhanen

Date July 5th 2007: 08:58

As is clearly seen in the above e-mail, the author is adamant that racial differences in intelligence are a result of the evolutionary process and natural selection and there is very little we can do to *reverse* the situation or equalize human conditions. Vanhanen has got his argument backwards. It makes far more sense to argue that the populations of rich countries do better on IQ tests because they have access to better nutrition and education; Vanhanen

¹ Berhanu, Girma. (2007). Black intellectual genocide: An essay review of *IQ and the Wealth of Nations*. *Education Review*, 10(6). Retrieved November 16, 2011 from <http://edrev.asu.edu/essays/v10n6index.html>.

and his co-author Richard Lynn use scientific jargon, and *techniques* to support claims of natural superiority of one identifiable human population² or group to another.

The message is essentialist, nativist, and deterministic. It denies the conventional view and scientifically proven fact that group differences in intelligence are primarily or exclusively determined by different cultural circumstances, schooling, knowledge, and socioeconomic factors and therefore could be eliminated by improvements in behavioural standards, access to cultural capital, socioeconomic status, home environment, and so on. The e-mail message and the contents of Richard Lynn's book are in line with many of the luminaries (e.g., Kant, Hume, and Hegel) of Western philosophy who at one time or another have written about race as if those human groups that distinguished themselves both geographically and phenotypically constituted natural "types" in terms of temperament and intellect.

Lynn and Vanhanen (2002) argue that the relation between intelligence and economic well-being is causal; that intelligence causes well-being, and that, beyond improving nutrition, very little can be done about it (Hurt & Wittman, 2008). In fact, the authors go so far as to claim:

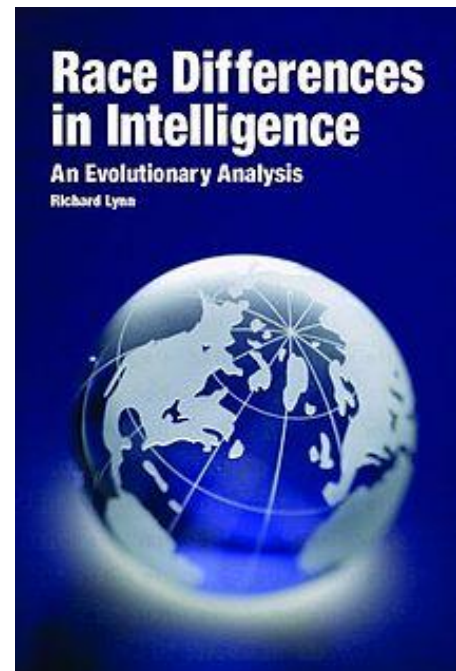
The populations of the rich countries may have to accept that they have an ethical obligation to provide financial assistance to the peoples of the poor countries for the indefinite future, just as within countries the rich accept that they have an ethical obligation to pay taxes to support the poor. (Lynn & Vanhanen, 2002, p. 196)

The first problem with this particular testing in the Jimma orphanage to which Vanhanen refers in his e-mail is its fundamental error in associating intelligence with natural selection. The next fundamental error is the distortion and conclusion drawn from an extremely poor and very limited sample. An orphanage in Jimma in 1989 was an extraordinary and traumatic experience for children who were victims of famine, resettlement, and relocation in massive scale. The 1984/85 famine resulted in massive resettlement to villages of poor farmers from the North to Jimma and such other southern areas. By 1989, the program was a total failure in which large numbers of people died of food shortage, poor health, and poor living conditions, often leaving young children with no parents. The resettlement program also affected the local farmers who experienced extreme food shortages resulting in demographic movements. The experience of orphaned children who survived harrowing experiences of death and starvation and ended up in orphanages cannot be seen as a representative sample for IQ testing. In fact, testing students at elite private schools in Addis Ababa is far more representative of the intelligence of Ethiopian students than testing traumatized orphans in a poorly-run orphanage in Jimma, in a deeply impoverished rural environment. The IQ test is not a credible scientific tool for the purpose of measuring the intelligence of a "nation" because there are too many variables not properly taken into account. Thus, the result, whatever it is, is useless. There are serious methodological defects in testing (Professor Tekola Hagos, personal communication, 2007; Berhanu, 1997).

² The genetic processes through which the higher IQs of the Europeans have evolved will have consisted of changes in allele frequencies towards a greater proportion of alleles for high intelligence and probably also through the appearance of new mutations for higher intelligence and the rapid spread of these through the population. The probability of new mutations for higher intelligence in the Europeans will have been increased by the stress of the extreme cold to which the Europeans were exposed (Lynn, 2006, p. 237).

It is clearly apparent that the authors do not fully understand proper use of statistics. Improperly designed statistics can be employed to obtain pre-determined results. They state that they have used IQ test results of unfortunate youngsters in the Jimma orphanage to arrive at the conclusion which was later extrapolated to make conclusions about the genetic potential of 81 million Ethiopians. Statistics could lead to defensible conclusions only if representative samples are used and if those samples are selected at random. Most orphanages, unfortunately, house children coming from the poorest-of-the-poor families or from families in which either one or both parents are deceased. In such families, children are usually born of severely malnourished mothers with no access to prenatal or postnatal care. Since the parents are extremely poor, they do not have the means to fulfil the very basic necessities of life. Such infants are raised with breast milk from undernourished mothers, supplemented only with starchy foods. That is why marasmus and kwashiorkor are rampant in developing nations such as Ethiopia. The United States addresses such nutritional problems through the federally funded Women, Infants, and Children program (WIC). The program provides Federal grants to States for supplemental foods (e.g., dairy products, eggs, fruits, vegetables, and whole grains), health care referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to 5 years of age who are found to be at nutritional risk. Pregnant mothers are also required to have free medical checkups and are regularly visited by health professionals. This is done because the last trimester of pregnancy and the first year of life are critical periods in the child's development, for it is during these periods that 65% of brain development of children takes place. The fetus, therefore, could have the genetic potential of a gifted child, but if the potential is not enhanced through proper nutrition and medical care, there is a possibility that the child's development could be severely retarded. This is often the story of children housed in orphanages (Dr. Seyoum Gelaye, personal communication, 2007).

In North America, Europe, Australia, and Ethiopia, we have a large number of extremely talented and successful Ethiopian engineers, lawyers, physicians, biologists, veterinarians, social scientists, physical and biological scientists, and educators. If the gentleman, the eugenicist, takes and assesses IQ's of these Ethiopians, he would be surprised to learn that they will have IQs possibly much higher than those of the Chinese or the Europeans. Even though such studies yield tantalizing results, it would be outrageous for a person to conclude that Ethiopians are therefore not only the origins of human civilization but also the most intellectually gifted people on the planet earth. This would, however, be an erroneous conclusion because it is not based on representative samples. The Jimma orphanage study is outlandish for the same reason.



Whether or not we endorse the theory of evolution and natural selection, a very recent study by the French geneticist Dr. Lluís Quintana-Murci and his colleagues (2008) have come to the conclusion that *genetically, people still look pretty much alike*. “Several of the differences Dr. Quintana-Murci detected are in genes for the superficial racial markers of skin colour and hair form. Most of the others whose functions are known are connected either with diet or with resistance to disease. . . . All in all, the school of thought which

holds that humans, for all their outward variety, are a pretty homogenous species received a boost.” (*The Economist*, Feb 9, 2008, p. 78). All recent human genomic studies have concluded that there are no genetic differences among the races. The genetic similarity is 99.99999%. We also know that there are more genetic variations within races than between races (Cavalli-Sforza, Menozzi, P., & Piazza, A., 1994).

This reaction to Vanhanen’s letter (2007), Lynn’s book (2006), and Kanazawa’s article (2008) is primarily motivated by the way they handled the so-called IQ data from my homeland. As far as I know, the IQ data from the Jimma orphanage, which Vanhanen mentioned, has not yet been used by Lynn in an official text or in public expression. I suspect that they are planning to use the Jimma orphanage IQ datum/value (71) in their bizarre argument.³

Children at the Jimma community orphanage between the ages of 5 and 14 were given a battery of tests to assess their intellectual, social, and nutritional well-being relative to a group of family-reared controls. Two tests of intellectual ability, the Raven’s Progressive Matrices and the Conservation test were used in the study. The problem is, in the first place, the test scores were not supposed to be converted to IQs. It is important to note that Raven originally did not intend the Progressive Matrices test to be used as an IQ test. There are indeed several reasons for not converting Raven’s scores to IQs. First, the Progressive Matrices are limited to a single test format. The test taker’s unfamiliarity with this format may depress test performance. Second, in comparison to IQ batteries, such as the Wechsler scales (Wechsler, 1974, 1997), the number of items is relatively small in both the SPM (i.e., 60 items) and the CPM (i.e., 36 items). An additional problem arises in the translation from SPM/CPM raw scores to IQs in the extreme score ranges, where values in the norm tables show large leaps for particular age groups.⁴ (Wicherts, Dolan, Carlson, & van der Maas, 2009)

To refresh my reader’s memory, Lynn and Vanhanen (2002) and Kanazawa (2006, 2007) have used IQ data of Ethiopian immigrants that came from Israel as the average IQ of Ethiopia. Most of these immigrants had rudimentary literacy and experienced an abrupt transition from rural Ethiopia to Israel, with all the accompanying effects that it entails such as trauma, dislocation, and cultural shock. The test was conducted a few months after their arrival. That specific study, conducted by two Israelis, assigns low IQs to the immigrants and is replete with technical and statistical errors (see Berhanu, 2007, for a detailed account). That figure –average IQ 63⁵ – which was attached to Ethiopia as average national

³ We are now informed concerning the orphanage and that a critical review of the alleged study will be ready shortly. Aboud, F., Samuel, M, Hadera, A. & Addus, A. (1991). Intellectual, social, and nutritional status of children in an Ethiopian orphanage. *Social science and medicine*, 33, pp. 1275-1280.

⁴ Wicherts, J. M., et al., Raven’s test performance of sub-Saharan Africans: Average performance, psychometric properties, and the Flynn Effect, *Learning and Individual Differences* (2009), doi:10.1016/j.lindif.2009.12.001.

⁵ The IQ figure that stood in the authors’ book to represent Ethiopia came from Israel, not directly from Ethiopia. I have met some of those who tested the young people (newly arriving immigrants from Ethiopia) and I have probably met half of these immigrants. It is very possible that a few of them are my acquaintances. That was made possible because I collected data for my PhD dissertation from Israel; my research concerns Ethiopian Jews’ school achievement and integration process in Israel (Berhanu, 2001). The IQ that Lynn and Vanhanen assigned to Ethiopia was simply picked from Kaniel and Fisherman’s (1991) article that appeared in the *International Journal of*

intelligence in their book (Lynn & Vanhanen, 2002, p. 75, p.137, p. 204) had motivated me to write “*Black Intellectual Genocide: An Essay Review of IQ and the Wealth of Nations.*” Note that this same IQ datum (63) has been used (as third-hand information) in a controversial article in the November issue of the *British Journal of Health Psychology* by Satoshi Kanazawa (2006) in which the author confidently stated that low IQ levels (rather than inequality, poverty, and disease) are the reason for African nations’ chronic ill-health, high infant mortality rate, and low life-expectancy. Kanazawa (2006) claims that he reached this conclusion by comparing national IQs with indicators of ill health in 126 countries. That same IQ datum has again been used in Kanazawa’s article and Lynn’s book (which are the subject of my review here) to make further untenable and unscientific assumptions. Here I critique and explicate these flawed assumptions, questionable data, inappropriate analyses, and highly biased interpretations. In all my academic career, I have never come across a “scholastic work” that is so replete with fundamental and substantive analytical, theoretical, and methodological flaws. I hope my essay review highlights this point.

As if that were not enough, Richard Lynn has used new IQ data for Ethiopia in his book under review here: “A second study of the IQ of Ethiopian Jews has been published by Kozulin (1998). These were 14-16 year-olds who had been in Israel four or more years, were attending Israeli boarding schools, and were tested with the progressive Matrices. Their mean IQ was 65. These results suggest that education in western schools does not benefit the African IQ” (Lynn, 2006, p.53). This is an amazing distortion of the content of Kozulin’s article. I am familiar with this specific study because I was then in Israel working with Ethiopian Jews under the supervision of Professor Alex Kozulin. What Kozulin wanted to demonstrate in that study is that Ethiopian immigrant students tested by different kinds of IQ tests have in pre-intervention tests demonstrated less than the Israeli norm; however, after intervention (a short but intensive teaching process) that included teaching problem-solving strategies, Ethiopian immigrant children narrowed the gaps and performed at about the same level as the Israeli norm (Tzuriel & Kaufman, 1999; Kozulin, 1998 a,b). Kozulin stated further that the intervention appeared to be effective not only in improving the absolute score on the Standard Progressive Matrices but also in changing the students’ cognitive profiles.

It is typical of Lynn to select data or scores in the psychological literature that fit his theory that Africans are uneducable. Strong criticism has come about from several sources, including from scholars who approve of some of Lynn’s conclusions, in particular on the

Psychology (26, pp. 25-33). Lynn & Vanhanen (2002, p. 204) wrote: “Around 1989, data for a sample of 250 15-year-old Ethiopian immigrants to Israel tested with the Standard Progressive Matrices have been reported by Kaniel and Fisherman (1991). In relation to the 1979 British standardization sample, their mean IQ was 65. Because of the 10-year interval between the two collections of data, this needs to be reduced to 63.” Here one could question the validity of the writers’ knowledge of these 250 Ethiopian immigrants. These 15-year-olds came from a region called Gonder. They lived most of their lives in the countryside with rudimentary knowledge of “school-related tasks” that so-called modern industrialised societies highly value. They were airlifted by Israeli security agents in extremely dramatic circumstances, and their arrival in Israel was abrupt. Many lost their near relatives in this dramatic episode; and many more were unattended, solitary children. Family disintegration, psychological trauma, confusion, dislocation, and cultural shock were rampant at the moment when the test was administered. Most of these students who are described as having low IQs are presently enjoying a satisfying life and are occupationally competent and socially adequate; they are now in their late 20s or early 30s.

relation between national intelligence and national prosperity. In their most recent study, Hunt and Wittman (2008) wrote

The majority of the data points were based upon convenience rather than representative samples. Some points were not even based on residents of the country. For instance, the “data point for Suriname was based on tests given to Surinamese who had migrated to the Netherlands, and the “data point” for Ethiopia was based on the IQ scores of a highly selected group that had emigrated to Israel and, for cultural and historical reasons was hardly representative of the Ethiopian population. The data point for Mexico was based on a weighted averaging of the results of a study of “Native American and Mestizo children in Southern Mexico” with results of a study of residents of Argentina. Upon reading the original reference, we found that the “data point” that Lynn and Vanhanen used for the lowest IQ estimate, Equatorial Guinea, was actually the mean IQ of a group of Spanish children in a home for the developmentally disabled in Spain. Corrections were applied to adjust for differences in IQ cohorts (the “Flynn” effect) on the assumption that the same correction could be applied internationally, without regard to the cultural or economic development level of the country involved. While there appears to be rather little evidence on cohort effect upon IQ across the developing countries, one study in Kenya (Daley, Whaley, Sigman, Espinosa, & Neumann, 2003) shows a substantially larger cohort effect than is reported for developed countries. (p. 2)

Organization of the review

The review is organised according to the order of the contents outlined in Richard Lynn’s book (2006) and also the title of the book, *Race differences in intelligence: An evolutionary analysis*. The first two chapters of the book deal with the meaning and measurement of intelligence, and the meaning and formation of races. After the next ten chapters set out, as he claimed, the evidence for the average IQ of each of the ten races, there follows a chapter on the reliability and validity of the measures. Chapter 14 presents “Environmental and Genetic Determinants of Race Differences in Intelligence,” in which he concludes that the causes of race differences in intelligence are 50% genetic and 50% environmental. The last three chapters are concerned with the book’s subtitle (An Evolutionary Analysis) and discuss how race differences in intelligence have evolved.

Satoshi Kanazawa’s article is based mainly on IQ data that he picked from Lynn’s books and articles. Nearly 50% of the references in Kanazawa’s article are of Lynn. What he actually did is that he used data on national IQ (the mean IQ of a national population) taken from Lynn and Vanhanen (2002, 2006)⁶. Temperature and “evolutionary novelty⁷” are used

⁶ Many articles have recently been published based on the same data on national IQ (the so-called mean IQ of a national population). Almost all of these articles appeared in the journal *Intelligence*. See, for instance, IQ and fertility: A cross national study by Steven M. Shatz, *Intelligence* 36 (2008) 109-111. Barbara (2005) used the same data to demonstrate the national IQs relationship with various national demographic variables. The author claims that national IQ was significantly related to the following variables: proportion of workers in agricultural labour (-0.70), proportion of low birth weight babies (-0.48), illiteracy rates (-0.71), infant mortality rates (-0.34), secondary school enrollment ratio (0.72) and gross national product (0.54) (Barbara, 2005). Educational and ecological

as independent variables. Again, he used data on annual mean temperature (in degrees Celsius) from Lynn and Vanhanen (2006, 327-333, Appendix 3). Latitude, longitude, and distance from the evolutionary environment are used as indicators of so-called evolutionary novelty. So his conclusion with this absurd quantification is that annual mean temperature and evolutionary novelty (measured by latitude, longitude, and distance from the ancestral environment) simultaneously have independent effects on average intelligence of populations. Temperature and evolutionary novelty together explain one-half to two-thirds of variance in national IQ, he argues. In this preview, I will not make a specific effort to go through his multiple regression analyses of the data. It is sufficient to scrutinize Lynn's data and assumptions and uncover the major deficiencies in his general methodological packages upon which Kanazawa makes further similar assumptions such as: "The farther away a nation is from sub-Saharan Africa, both latitudinally and longitudinally, the higher the average intelligence of the nation's population"⁸ (p. 107). Kanazawa used the IQs from Lynn and Vanhanen (2002) that were "empirically" obtained and were frequently products of psychometric studies with inappropriately small and non-representative samples. The IQ figures were obtained by taking unweighted averages of different IQ tests with a very limited number of studies. The IQ figures in Lynn and Vanhanen are based on one study only in 34 nations and two studies in 30 nations. Thus, setting aside the huge ideological, conceptual, cultural, and contextual problems that exist for such measures, the methodological problems with Lynn and Vanhanen's data place them well beyond acceptable limits for valid psychometric research (Marks, 2007, p.180).

Lynn and co-workers' data on which Kanazawa based his conclusion have been seriously questioned by many scholars. A series of recent works by Wicherts and colleagues (2009, 2010a,b) published in *Intelligence* detected a number of serious methodological problems. A systematic literature review of the average IQ of sub-Saharan Africans by these authors has elevated the average IQ of the Black population of sub-Saharan Africa by about 12 points. This change in the IQs means all the assumptions made not only by Kanazawa but also by

correlates of IQ: A cross-national investigation. *Intelligence*, 33, 273–284. Heiner Rindermann (2008) used the same data to write his recent article Relevance of education and intelligence for the political development of nations: Democracy, rule of law and political liberty *Intelligence* 36 (2008) 306–322. Kanazawa (2006) himself used the same data in his article, Mind the gap...in intelligence: Re-examining the relationship between inequality and health. *British Journal of Health Psychology*, 11, 623- 642. to conclude that the disturbing image of poverty, inequality, and violence that we currently see in the world does *not* cause high infant mortality rate, low life expectancy, or low per capita income. He claims it is the average intelligence of the nations that causes all this misery. All these studies outlined above indicate that national IQ scores have demonstrated predictive validity. None questioned the reliability and validity of the national IQ scores compiled by Lynn and Vanhanen (see Berhanu, 2007 for a critical analysis).

⁷ The evolutionary novelty of an environment is the extent to which it differs from the evolutionary environment in sub-Saharan Africa. It includes all features of the environment and is therefore difficult to operationalize and measure precisely (Kanazawa, 2008, p. 101).

⁸ "My multiple regression analyses strongly support both Lynn and Rushton's temperature theory and Kanazawa's evolutionary novelty theory of the evolution of general intelligence. Except when I choose the intersection of the equator and the prime meridian as the arbitrary location of the ancestral environment, the annual mean temperature of a nation has a consistently negative effect on the nation's average intelligence. Precisely as Lynn (1991) and Rushton (1995) predict, the colder the climate on average, the higher the population's intelligence, even when its location (in terms of longitude and latitude) is controlled" (Kanazawa, 2008, p.107).

many “scholars”⁹ face serious troubles. Wicherts, Dolan, and van der Mass (2010a) noted that these 12-points changes mean:

For instance, the correlation between distance from Ethiopia and national IQs in Kanazawa's (2008) study (N=113) drops from $r=.198$ (pb.05) to $r=.113$ ($p=.23$) and the correlation between national IQs and HIV/AIDS rate (N=70) reported by Templer (2008) changes from $r=-.635$ to $r=-.481$. Likewise, Rushton and Templer (2009) correlated national IQs with several crime-related variables, but after correcting the national IQs in Africa the correlations changed from $r=-.253$ to $r=-.261$ for homicide, from $r=-.290$ ($p=.002$) to $r=-.229$ ($p=.015$) for rape, and from $r=-.215$ ($p=.02$) to $r=-.162$ ($p=.09$) for assault. The robustness of these and other findings against alternative estimates of national IQs in Africa should be addressed in future studies.

Wicherts et al. (2010a) concluded that:

The assertion that the average IQ of Africans is below 70 is not tenable, even under the most lenient of inclusion criteria. . . . According to our inclusion criteria, the average IQ (in terms of UK norms) of the African samples on the basis of the tests featured in our review is 81 or 82. . . . Our estimate clearly differs from that of Lynn (and Vanhanen). First, Lynn (and Vanhanen) apparently used different inclusion criteria. Unfortunately, their inclusion criteria are neither mentioned nor discussed (bar some rare cases). Second, we came across several downward errors in the computation of average IQ (e.g., Fahmy, 1964; Lloyd & Pidgeon, 1961). Third, our extensive search for relevant studies resulted in additional studies of IQ in Africa that Lynn (and Vanhanen) missed. This was partly caused by the fact that we had access to African journals that did not show up in Lynn (and Vanhanen)'s work. Because Lynn (and Vanhanen) missed a sizeable portion of the relevant literature, their estimate of average IQ of Africans is clearly too low. Combined, the current systematic review and the results of our review of Raven's tests suggest that the average IQs of African test takers is close to 80. We believe that the accuracy of estimates of national IQ of sub-Saharan African countries can be improved considerably. (p. xxx)

One of the principal criticisms that must be made of Kanazawa's article is its unquestioning reliance on IQ data obtained from Lynn and Vanhanen (2002) and that he used national IQs to test evolutionary theories. This essay review debunks the assumptions of these authors and provides an extended review of the research literature that argues against their

⁹ “Lynn and Vanhanen's estimate of the average IQ of Africans is accorded a central role in the discussion on Black–White differences in IQ by Rushton and Jensen (2005). This estimate features prominently in several evolutionary theories of intelligence (Kanazawa, 2004; Lynn, 2006; Rushton, 2000). Moreover, Lynn and Vanhanen's (2002, 2006) estimates of national IQ have been featured in over 20 scientific studies (Barber, 2005; Dickerson, 2006; Gelade, 2008a,b; Jones & Schneider, 2006; Kanazawa, 2006, 2008; Kirkcaldy, Furnham, & Siefen, 2004; Lynn, Harvey, & Nyborg, 2009; Meisenberg, 2004; Morse, 2006; Ram, 2007; Rindermann, 2006, 2007, 2008a,b; Rindermann & Meisenberg, 2009; Rushton & Templer, 2009; Shatz, 2008; Templer, 2008; Templer & Arikawa, 2006a,b; Voracek, 2004; Weede & Kampf, 2002; Whetzel & McDaniel, 2006; Woodley, 2009).” See Wicherts et al. (2010a & b, p. 2) for complete references for all these publications.

assumptions and presents a different picture about the concept of race and of intelligence, what IQ measures and does not measure, and the “evolution of brain.”

The concept of race: The meaning and formation of races

According to Lynn (2006), a simple and straightforward definition of race is that it consists of a group that is recognizably different from other groups. A fuller definition, according to Lynn, is that “a race is a breeding population that is to some degree genetically different from neighbouring populations as a result of geographical isolation, cultural factors, and endogamy, and which shows observable patterns of genotypic frequency differences for a number of intercorrelated, genetically determined characteristics, compared with other breeding populations” (p. 7). Lynn argues that the different varieties evolve as a result of the four processes of founder effects, genetic drift, mutation, and adaptation. The founder effect is that, when a population splits and one group migrates to a new location to form a new population, the group that migrates will not be genetically identical to the one left behind. Hence the two populations differ genetically. The genetic drift effect is that gene frequencies change over time to some extent as a matter of chance and this leads to differences between populations. Drift continues with time and leads to increasing differences between races. The mutation effect is that new alleles (alternative forms of genes) appear through chance in some populations and if they are advantageous for survival and reproduction will gradually spread through the population. An advantageous new allele may appear as a mutation in one race, but not in others.

Lynn has used the ten “clusters” or population groups identified by Cavalli-Sforza, Menozzi, and Piazza (1994), which he regards as “races.” These are: (1) Bushmen (South Africa) and Pygmies; (2) Sub-Saharan Africans; (3) South Asians (Middle-East, India, Pakistan) and North Africans; (4) Europeans; (5) East Asians (China, Japan); (6) Arctic Peoples; (7) Native American Indians; (8) South East Asians; (9) Pacific Islanders; and (10) The Australian Aborigines and the Aboriginal New Guineans. He also devoted a chapter to each of the ten “genetic clusters.” The experts Cavalli-Sforza, Menozzi, and Piazza (1994) who conducted extensive studies that were published in a book entitled *The History and Geography of Human Genes* used *clusters* instead of *races*. However, Lynn has replaced *clusters* with *races* arguing that the “classification corresponds closely to the racial taxonomies of classical anthropology based on visible characteristics of colour of skin, hair, eyes, body shape, limb length, and the like but for some reason Cavalli-Sforza, Menozzi, and Piazza (1994) prefer the term clusters” (p. 10).

With no convincing scientific evidence of the state of the art, Lynn argues that race is a biological construct. His discussion of race is more focused on criticising statements made by geneticists, anthropologists, and biologists. For instance Cavalli-Sforza, Menozzi, and Piazza (1994, p.19) wrote about the “scientific failure of the concept of human races”: “the concept of race has failed to gain acceptance.” Similarly, Graves (2002, p. 6) states that “the majority of geneticists, evolutionary biologists and anthropologists agree that there are no biological races in the human species.” And, “...almost all anthropologists agree that races in the popular sense do not exist and never have existed” (Cohen, 2002, p. 211). Although the above statements are made on the basis of extensive research and a meta-analysis of the existing research, Lynn maintains that race is a scientifically valid biological category.¹⁰

¹⁰ “In the twentieth century, social scientists made strident efforts to challenge the assumptions and reveal the lack of empirical evidence behind the racial theories of humankind. However, it took

Having reviewed Lynn's book, Loehlin (2007) wrote that he found fault with Lynn's treatment of race in at least two respects:

First, he does not emphasize that the vast majority of genetic variation is not between populations, but among individuals within them. Race differences are fairly small potatoes, if what you are interested in is the variation in the intelligence of humans. And second, he is not always as careful as he might be in the language he uses. A statement like "clines are hybrids between two pure races" (p. 13)—is simply to invite trouble. The phrase "pure races" is bound to evoke old-fashioned racial stereotypes—baggage that Lynn does not need. And the statement is imprecise as well. To the population geneticist, clines are simply geographic gradients of gene frequencies. Such gradients may result from interbreeding between previously separated populations, as Lynn suggests, but this does not define them, as they may occur for other reasons as well, such as differential selection in different parts of the range of a species, a notion that should not be theoretically objectionable to Lynn. (pp. 93-94)

Lynn's central thesis in Chapter 2 is that aspects of physical appearance—phenotype—are outward manifestations of heritable traits such as abilities, propensities for certain behaviours, diseases, and other sociocultural characteristics. He attempts to demonstrate that in Chapters 3-17. These are all futile attempts, however, given the state of the art and current genetic research:¹¹

It is because these differences are external that these racial differences strike us so forcibly, and we automatically assume that differences of similar magnitude exist below the surface, in the rest of our makeup. This is simply not so; the remainder of our genetic makeup hardly differs at all. (Cavalli-Sforza & Cavalli-Sforza, 1995, p. 124)

Human diversity in physical features—phenotype—also arises if populations are geographically separated from each other for long periods of time. Some external features, such as skin colour and body size and shape, are highly subject to the influence of natural

epochal events, most notably the spectre of Nazi Germany and the nationalist movements of colonized peoples, to weaken the grip of racism as a popular and scientific theory. Although biological theories of race have been largely discredited by these political events and scientific progress, racial identities, classifications, and prejudices remain part of the fabric of many modern societies. I maintain that social science, and demography in particular, have an obligation to show that it is impossible to discuss the issue of race with any logic or consistency without an understanding of the origins and characteristics of racism." (Hirschman, 2004, p. 386)

¹¹ This point requires further attention. There is no doubt that there are some important biologic differences among populations, and molecular techniques can help to define what those differences are. Some traits, such as skin colour, vary in a strikingly systematic pattern. The inference does not follow, however, that genetic variation among human populations falls into racial categories or that race, as we currently define it, provides an effective system for summarizing that variation. The confused nature of this debate is apparent when we recognize that although everyone, from geneticists to laypersons, tends to use "race" as if it were a scientific category; with rare exceptions, no one offers a quantifiable definition of what a race is in genetic terms. The free-floating debate that results, while entertaining, has little chance of advancing this field (Cooper, Kaufman and Ward, 2003, p. 1168 and references therein).

selection in response to climate. Areas with greater exposure to sun, such as the tropics, have provided an advantage to persons with naturally darker skin pigmentation, who were more likely to have survived and to have left greater numbers of descendants in successive generations. In northern latitudes with less sunlight, cereal eaters do not receive sufficient Vitamin D, and fair skin provides a survival advantage because it allows for greater absorption of ultraviolet rays, which aids in the production of Vitamin D (Cavalli-Sforza & Cavalli-Sforza, 1995, pp. 93-94).

Drawing on the work of many scholars, Hirschman (2004) concludes that race and racism are not ancient or tribal beliefs but have developed apace with modernity over the last 400 years and reached their apogee in the late nineteenth and the first half of the twentieth century (see also Smedley & Smedley, 2005). Social science did not originate the belief that innate differences are associated with racial groups, but many social scientists in the Social Darwinist tradition were complicit in the construction and legitimation of racial theories (Hirschman, 2004, p. 386). The concept is intrinsically intertwined with social hegemony and inequality.¹² As Omi (2001) noted, “the idea of race and its persistence as a social category is only given meaning in a social order structured by forms of inequality—economic, political, and cultural—that are organized, to a significant degree, by race” (p. 254).

Racism¹³ in its modern meaning was little known in the great civilizations of antiquity except for some awareness of racial features in art and literature (Hirschman, 2004). In discussing race and cultural differences in ancient agrarian and maritime empires, Snowden (1983) summarized the prevailing view among scholars:

The ancients did accept the institution of slavery as a fact of life; they made ethnocentric judgments of other societies; they had narcissistic canons of physical beauty; the Egyptians distinguished between themselves, "the people," and outsiders; and the Greeks called foreign cultures barbarian. Yet nothing comparable to the virulent colour prejudice of modern times existed in the ancient world...black skin was not a sign of inferiority; Greeks and Romans did not establish colour as an obstacle to integration in society. (p. 63)

Fredrickson (2002) argued that modernization is a precondition for an overtly racist regime.¹⁴ Smedley and Smedley (2005) had the following to say about this specific phenomenon:

¹² “From its inception, race was a folk idea, a culturally invented conception about human differences. It became an important mechanism for limiting and restricting access to privilege, power, and wealth. The ideology arose as a rationalization and justification for human slavery at a time when Western European societies were embracing philosophies promoting individual and human rights, liberty, democracy, justice, brotherhood, and equality” (Smedley & Smedley, 2005, p.22).

¹³ “Racism is a structure of belief that the ‘other community’ is inherently inferior and lacks the capacity to create a society comparable to one’s own” (Hirschman, 2004, p. 389).

¹⁴ “The monstrous evils that led to the deaths of 6 million Jews in Nazi Germany and the racial apartheid system of South Africa are often considered aberrations of the twentieth century. However, racism and modernity are compatible. Germany was perhaps the most modern society in early-twentieth-century Europe and the Jewish population in Germany was largely assimilated into German culture, with a high degree of intermarriage” (Fredrickson 2002, p. 125).

The fabrication of a new type of categorization for humanity was needed because the leaders of the American colonies at the turn of the 18th century had deliberately selected Africans to be permanent slaves (Allen, 1994, 1997; Fredrickson, 1988, 2002; Morgan, 1975; A. Smedley, 1999b). In an era when the dominant political philosophy was equality, civil rights, democracy, justice, and freedom for all human beings, the only way Christians could justify slavery was to demote Africans to nonhuman status (Haller, 1971; A. Smedley, 1999b). The humanity of the Africans was debated throughout the 19th century, with many holding the view that Africans were created separately from other, more human, beings. (p. 19)

According to Smedley and Smedley, Ashley Montagu's *Man's Most Dangerous Myth: The Fallacy of Race*, first published in 1942, became a standard text for university students in the 1950s and 1960s. UNESCO, a branch of the United Nations, issued an authoritative report in 1952 entitled *The Race Concept: Results of an Inquiry*. The report was intended to expose the fallacious assumptions of racial ideologies. What was actually written then in that document still rings true and is being supported by the state of the art and recent findings.

(a) In matters of race, the only characteristics which anthropologists can effectively use as a basis for classifications are physical and physiological. (b) According to present knowledge there is no proof that the groups of mankind differ in their innate mental characteristics, whether in respect of intelligence or temperament. The scientific evidence indicates that the range of mental capacities in all ethnic groups is much the same. (c) Historical and sociological studies support the view that genetic differences are not of importance in determining the social and cultural differences between different groups of *Homo sapiens*, and that the social and cultural changes in different groups have, in the main, been independent of changes in inborn constitution. Vast social changes have occurred which were not in any way connected with changes in racial type. (UNESCO. 1952, p. 102-103)

A biologist at the University of Arizona, Graves (2002, p. 2-5), likewise asserts that “biological races do not exist” and writes that “the term race implies the existence of some nontrivial underlying hereditary features shared by a group of people and not present in other groups.” As seen above, a discussion of what is meant by racial groups and whether such groups are, in fact, discrete, measurable, and scientifically meaningful are contested. However,

The consensus among most scholars in fields such as evolutionary biology, anthropology, and other disciplines is that racial distinctions fail on all three counts—that is, they are not genetically discrete, are not reliably measured, and are not scientifically meaningful. Yet even these counterarguments often fail to take into account the origin and history of the idea of “race.” This history is significant because it demonstrates that race is a fairly recent construct, one that emerged well after population groups from different

continents came into contact with one another. (Smedley & Smedley, 2005, p. 16)¹⁵

Likewise, Williams, Lavizzo-Mourey, and Warren (1994) wrote that:

Race is an unscientific, societally constructed taxonomy that is based on an ideology that views some human population groups as inherently superior to others on the basis of external physical characteristics or geographic origin. The concept of race is socially meaningful but of limited biological significance. Racial or ethnic variations in health status result primarily from variations among races in exposure or vulnerability to behavioral, psychosocial, material, and environmental risk factors and resources. (p. 26)

Although widely shared in our society, the belief that races are human populations that differ from each other primarily in terms of genetics is without scientific basis. . . . There is more genetic variation within races than between them, and racial categories do not capture biological distinctiveness. The fact that we know what race we belong to tells us more about our society than about our genetic makeup. . . . Racial taxonomies are arbitrary, and race is more of a social category than a biological one. (p. 27 and references therein)

In line with the current research, the importance of race and ethnic background in biomedical research and clinical practice has recently been debated. Some have questioned the use of racial classification in medicine and biomedical research, claiming that it is no longer useful since it reflects “a fairly small number of genes that describe appearance” (Lander, 2001) and “there is no basis in the genetic code for race” (Angier, 2000). Some even argue for the exclusion of racial classification in medicine and biomedical research (Schwartz, 2001). Others argue for a cautious look on the matter before abandoning the conventional classifications and claim that there are racial and ethnic differences in the causes, expression, and prevalence of various diseases (see Esteban González Burchard et al., 2003).

Since we do not know about the genetic variants that predispose persons to common chronic diseases, one might assume that arguments for the existence of genetic predispositions would be made for all population groups equally. The reality is very different. Minority groups, particularly blacks in the United States, are assumed to be genetically predisposed to virtually all common chronic diseases. Genes are regularly proposed as the cause when no genetic data have been obtained, and the social and biologic factors remain hopelessly confounded. Even when molecular data are collected, causal arguments are based on non-significant findings or genetic variation that does not have an established association with the disease being studied. Coincidence is not a plausible explanation of the widespread occurrence of this practice over time and across sub-disciplines. The correlation between the use of unsupported genetic inferences and the social standing of a group is glaring evidence

¹⁵ See the statements of the American Anthropological Association (1998) and the American Association of Physical Anthropologists (1996). Among the many anthropologists who have written on this topic, see “Brace, 2003; Cartmill, 1998; Cavalli-Sforza, 1995; Graves, 2001, 2004; Harrison, 1995; Lewontin, 1995; Littlefield et al., 1982; Marks, 1995; Shanklin, 1994; A. Smedley, 1999b, 2002b; and Templeton, 2002 “ (Smedley & Smedley, 2005, p. 16 and references therein).

of bias and demonstrates how race is used both to categorise and to rank order sub-populations (Cooper, Kaufman & Ward, 2003, p. 1168, and references therein).

Not only are the relevant genetic data absent, but the distribution of polygenic phenotypes does not suggest that race is a useful category. On this very shaky ground, American society has created social arrangements and public policies that assume that race is a real phenomenon and that distinct racial populations exist. And still worse, in the name of science, Lynn advances his continued essentialist position that “race is real.” For both Lynn and Kanazawa, race and racial difference are self-evident facts of experience: race as ubiquitous; race as essential rather than accidental or contingent; race as the primary determinant of all experience.

In her fascinating article “What's in a name? Racial categorisations under apartheid and their afterlife,” Deborah Posel (2001) wrote about the inconsistencies, fluid and irrational, decentralised and ununified classification process which mainly focuses on “appearance” and “general acceptance,” and noted that readings of appearance were informed by the semiotics of class and status:

There was no pretence at formal, scientific rationality in the classification process. Instead, when it came to the classification of ‘appearance’, the terms of the law gave free rein to the miscellany of biological myths about racial appearances that inhabited the realm of common sense. Multiple and discrepant bodily signifiers of race were invoked, producing mobile and at times inconsistent judgements of racial appearance. Evidence for race was found most familiarly in skin colour. But this was not necessarily the overriding or conclusive factor, particularly when confronted with the ambiguities of an individual whose way of life seemed at odds with his or her skin colour—as in the case of a man who considered himself ‘Coloured’ but who was classified ‘native’ despite having blue eyes and fair skin. Each classifier was at liberty to specify their pet criteria for race. For one magistrate, the definitive test was not skin colour *per se*, but rather the patch of skin on the inside of the arm. (pp. 58-59 and references therein)

Apartheid’s racial reasoning or basic epistemological premise of the apartheid system of racial classification can be outlined in six themes: Race and racial difference as self-evident facts of experience; The ontology of race: a mix of biology, class and culture; Race as ubiquitous; Race as essential rather than accidental or contingent; Race as the primary determinant of all experience; Race as the *site* of white fear (see Posel, 2001). In Lynn’s book which is the subject of this review, the above typologies are deeply ingrained throughout his thesis.

Chapters 3-12 then itemise in great detail the results of numerous intelligence tests given to ten “racially-distinguished populations”: Europeans; Africans; Bushmen and Pygmies; South Asians and North Africans; Australian Aborigines; Pacific Islanders; East Asians (China, Japan); Arctic Peoples and Native Americans.

Base-lining Europeans at IQ = 100, sub-Saharan Africans come out at around 67. Corrected for poor environmental conditions, Lynn (2006) estimates the genotypic IQ (the mean IQ Africans would have if raised in the same environment as Europeans) as around 80. Conversely, East Asians seem to have IQs centred around

105 (p. 130) while some populations of Ashkenazim Jews have mean IQs between 107-115 (p. 94).

Chapters 13-17 summarise racial differences, and propose an explanation based on the geographic radiation of *Homo sapiens* out of Africa, the resulting geographical isolation of sub-populations, and the impact of two ice-ages (the first from 70,000 to 50,000 years ago, and then the more severe Wurm glaciation, 28,000 to 10,000 years ago). These culled the less-intelligent in those racial groups most exposed to arctic conditions as well as driving the more obvious physiological adaptations. The East Asians were particularly stressed by harsh conditions north of the Himalayas and east of the Gobi Desert. In the following sections, I will present a discussion of how Lynn got it all wrong.

The concept of intelligence, mental testing and IQ

Chapter 1 defines *intelligence* and attempts to argue that IQ is a measure of it. As may be expected, Lynn's thesis revolves around the presumption that intelligence is what IQ measures. Pioneers in the field with hereditarian positions (e.g., Spearman, Eysenck, Jensen, and Thurstone) have claimed the same thing using different wordings. Lynn asserts, "Intelligence conceptualized as a single entity can be measured by intelligence tests and quantified by the IQ (intelligence quotient)" (p. 3). Lynn seems to generally accept the definition proposed by the American Psychological Association Task Force that intelligence is the ability "to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought" (Neisser, 1996, p. 1).¹⁶ Lynn is, however, uncomfortable with the component of effective adaptation to the environment. Surprisingly, he went on to say that "in economically developed nations, the underclass with its culture of long-term unemployment, crime, drug dependency, and welfare-dependent single mothers, is well adapted to its environment in so far as it is able to live on welfare and reproduce, but it has a low IQ average, as shown in detail by Herrnstein and Murray (1994), and is not intelligent in any reasonable sense of the word or as measured by intelligence tests" (p. 3). A definition that avoids this interpretation, according to Lynn, is the one proposed by Linda Gottfredson (1997):

¹⁶ "Although intelligence may well be adaptive, in the sense that it enables humans to solve problems and improve their reproductive success, the assumption that intelligence is an adaptation to deal with evolutionarily novel problems ignores the possibility that intelligence might simply be a serendipitous by-product of the way the human brain evolved. In this sense, intelligence would be more accurately described as an "adaptable trait" (i.e., one that is flexible and responsive to the context in which individuals develop and live) as opposed to an "adaptive trait" (i.e., one elected to fulfil a particular purpose, such as dealing with evolutionarily novel problems). Indeed, there is no reason why problem solving would necessarily evolve as a fixed response to novelty rather than as a trait that would develop in response to its environment, and the very nature of intelligence (particularly the way in which it enables humans to respond to, learn from and extrapolate between novel problems) suggests that it is unlikely to constitute a fixed response. And while Kanazawa assumes that the principal benefit of intelligence is that it is important for solving evolutionarily novel problems, intelligence would have also been subject to selection if it improved humans' ability to solve evolutionarily familiar problems in ways that improved their reproductive fitness. Only under circumstances where no increase in problem solving was necessary or beneficial, would there be no such selection for intelligence." (Ellison, 2007, p. 196)

Intelligence is a very general mental capacity which, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending our surroundings—"catching on," "making sense" of things, or "figuring out" what to do. (p.13)

A large number of studies lend support to the conclusion that intelligence as defined above gives a distorted profile of individuals and groups of people. What is conceived as intelligence varies from culture to culture, and the tests that are claimed to measure primary abilities of reasoning, verbal comprehension, perception, memory, nonverbal reasoning ability, and visualization are not culture free. They are conditioned by sociocultural factors, literacy, language, and a plethora of contextual factors. Furthermore, society's culture and institutions play a huge role in determining the skills that its citizens value and acquire. Modalities of information, literacy, language, knowledge, and familiarity are part of the jigsaw puzzle. I read somewhere that in 1952 on the fifth anniversary of independence, the Indian Government commissioned a survey to find out whether the average Indian villager had heard yet that the British had gone. The study was quietly cancelled when early results showed that the average villager had never heard that the British had even arrived.

As I have shown in a previous article (Berhanu, 2007), people's conception of intelligence varies depending on their cultural practices and meta-communicative frameworks, a testimony that people respond differently to contrasting circumstances. In a recent study (Berhanu, 2005), I attempted to show that the socialization of Ethiopian Jewish children is centred on *producing Chewa*, a well-behaved, kind, caring, "non-competitive," obedient, shy, and respectful child. Speed in talking, or solving problems, independent exploratory behavior, or stubborn inquisitiveness, question-answer type dyadic relationships for their own sake, "decontextualised" mediational styles, and joint parent-child play activities are rarely emphasized or encouraged (Berhanu, 2001). But that doesn't mean that the group is held back by "defeatist" thought patterns such as the cult of "anti-intellectualism." What the data indicate is that there is an overriding emphasis on a particular kind of moral development rather than a deliberate acceleration of cognitive development merely for its own sake, as is more symptomatic of "potlatched consumptivity" in competitive circumstances in Western education forms. Especially in their Ethiopian settings, children are trained in practical skills requiring mental training directly associated with the tasks at hand in a meaningful and functional manner.

Having conducted an extensive review of the literature, Dambrun and Taylor (2005) convincingly demonstrated that differences among social groups in terms of cognitive ability are largely illusory. Because these group differences are systematically associated with crucial contextual variables associated with the assessment of cognitive ability, the authors argue that the differences reflect the social context in which they were assessed rather than any real intrinsic differences. There is now relatively compelling evidence to suggest that even apparently minor aspects of the social context can have a dramatic impact on tests of cognitive ability. Specifically, the framing of a task and characteristics of the tester can have a dramatic effect on performance. Moreover, the authors suggest that these "contextual effects" can, and do, account for performance differences between social groups.

Lynn is claiming the race differences in intelligence by averaging the results of many studies that fit with his race pattern. He concludes that the East Asians (Chinese, Japanese, and Koreans) have the highest mean IQ at 105. Europeans follow with an IQ of 100. Some way below these are the Inuit or Eskimos (IQ 91), South East Asians (IQ 87), Native American Indians (IQ 87), Pacific Islanders (IQ 85), South Asians and North Africans (IQ 84). Well below these come the Sub-Saharan Africans (IQ 67) followed by the Australian Aborigines (IQ 62). The lowest scoring are the Bushmen of the Kalahari Desert together with the Pygmies of the Congo rain forests (IQ 54). Given the problematic nature of the concept of race and the difficulties in measuring the intelligence of people across cultures with test materials produced in the western culture and normed on white children, it is an enormous waste of time to attempt to compile IQ data at a global level. The test varies, the target group (in terms of age and other demographic variables) varies, and the sample size varies from nation to nation. The years in which the different tests were administered vary from country to country ranging over several decades; in fact, seven decades. It is unclear how the author would have resolved differences in results for the same country/population group if he had cared enough to pursue multiple studies. Still worse, the IQ samples can hardly be considered to be representative at the national level as in the case of Ethiopian children's IQ value (brought from Israel) standing for the nation of Ethiopia as a whole.

Lynn and many psychologists say they “measure intelligence” with IQ tests. But how can they know they do this as long as they are unable to *define* “intelligence”? Lynn's and associates' conception of intelligence is:

Intelligence, like electricity is easier to measure than to define. (Jensen, 1969, p.5)

Professor Peter Schönemann responded to the above statement: “How can this be? Have any of the essentialist axiomatizers ever rebuked Jensen for this patent absurdity? Or did they really not know that in physics nobody ever measures electricity? What physicists do measure is voltage and current—not “electricity”—and those are perfectly well defined—in contrast to ‘intelligence’” (Schönemann, personal communication, 2009; also Schönemann, 2007).

Cultural imperatives, group differences in intelligence and intelligent testing practices¹⁷

IQ is a culturally, socially, and ideologically rooted concept; an index intended to predict success (i.e., to predict outcomes that are valued as success by some people) in a given society. The items on IQ tests are largely measures of achievement at various levels of competency and culturally embedded artifacts (Sternberg et al., 1998a, 1999, 2003a; Snow & Yallow, 1982) and are devised impressionistically by psychologists to simply mimic the psycholinguistic structures of schooling and middle class clerical/administrative occupations (Richardson, 2002). Alfred Binet, originally devised the IQ test more than 100 years ago to screen children for educational difficulties, and made clear its conceptual foundations (see Richardson, 2002). Cronbach (1949/1970, p. 182) states the following deficiencies of one of the most used IQ tests, namely, the Stanford-Binet:

¹⁷ Some parts of this section were prepared in cooperation with my friend Bernie Douglas, an evolutionary anthropologist, with advice and guidance from Professor Peter Schönemann.

1. The scores are strongly weighted with verbal abilities.
2. It measures somewhat different abilities at different ages.
3. It requires experience common to the U.S. urban culture and is of dubious value for comparing cultural groups.
4. Score is influenced by the subject's personality and emotional habits (see Capron et al., 1999, for an extended discussion of this).

IQ tests are, and were originally designed to be, nothing more than devices for generating numbers that are useful in assessing academic aptitude within a given culture. For instance, with reference to Wechsler Intelligence Scale for Children (WISC-III), Kwate (2001) wrote that

... before we examine the test content, the standardization samples reveal much about the European-supremacist thrust of the test. In terms of racial ethnic group representation, European American children comprise 70.1% of the sample, African children 15.4%, Latino children 11.0%, and "Other" children 3.5%. In this sample, Other referred to Native American, Eskimo, Aleut, Asian, and Pacific Islander. This normative sample is presented as appropriate because it closely matched the U.S. population (as given by the 1988 census). Conceptually, however, it is an impenetrable mystery. Unless a child is 70% European, 15% African, 11% Latino, and 3.5% Other, these norms do not make sense. Why is it appropriate to test an African child with an instrument that is normed on a sample where 70% of the children are European American? (p. 225).

In his studies of trends in IQ development in 14 nations, Flynn (1987) demonstrated over 20 years ago that:

Data from 14 nations reveal IQ gains ranging from 5 to 25 points in a single generation. Some of the largest gains occur on culturally reduced tests and tests of fluid intelligence. The Norwegian data show that a nation can make significant gains on a culturally reduced test while suffering losses on other tests. The Dutch data proved the existence of unknown environmental factors so potent that they account for 15 of the 20 points gained. The hypothesis that best fits the results is that IQ tests do not measure intelligence but rather a correlate with a weak causal link to intelligence. This hypothesis can also explain difficult trends on various mental tests, such as the combination of IQ gains and Scholastic Aptitude Test losses in the United States. (p. 171)

Most traditional intelligence tests measure specific forms of cognitive ability that are said to be predictive of school functioning but do not measure the many forms of intelligence that are beyond these more specific skills, such as music, creativity, art, or interpersonal and intrapersonal abilities (Braaten & Norman, 2006). IQ and similar tests are also unable to measure potential, are not independent from what is measured by achievement tests, and are not powerful predictors of low reading performance (Bradshaw, 2001; Siegel, 1989). Test results in one child can vary according to mood, motivation, and fatigue, while the tests themselves show prominent rehearsal/learning effects, generally assume a degree of literacy, and are largely framed to suit Western cultural requirements (O'Brien, 2001). For these reasons, many argue that the use of IQ tests should be abandoned (Bradshaw, 2001; Schonemann, 1997c; Siegel, 1989, 1992; Vellutino et al., 2000). In addition, no tests except

dynamic tests (Sternberg & Grigorenko, 2002a¹⁸) that require learning at the time of the test, directly measure ability to learn. Traditional tests focus much more on measuring past learning, which can be the result of differences in many factors, including motivation and available opportunities to learn. In addition to these, there are a number of factors that may account for the differences in social group based differences in IQ tests:

... when the social context is threatening (i.e. high situational pressure), members of stigmatized groups (i.e. blacks, women and low socioeconomic status groups) perform less well than non stigmatized group members (i.e. respectively, whites, men and high socioeconomic status groups). But, when the social context is not threatening, both stigmatized and non stigmatized members perform equally in terms of cognitive ability. It is crucial that researchers take this element into consideration. As parsimony is desirable, it appears that social group differences in cognitive ability are wholly explainable without recourse to genes or brain size. (Dambrun & Taylor, 2005, p. 198)

Many IQ advocates argue that a general index of cognitive ability is the single best predictor of virtually all criteria considered necessary for success in life in the Western part of the developed world (Jensen, 1998; Schmidt, Ones, & Hunter, 1992), and maintain that undergraduates, “those who graduate from college,” must possess IQs that are no lower than 115 (Gottfredson, 1998; Ostrowsky, 1999), while individuals who are able to obtain a graduate level degree must possess an IQ in the range of 125 (Gottfredson, 1998). This often serves the purpose of suggesting that blacks and other minorities cannot go on to, or graduate from, institutions of higher learning—and ultimately move on to professional careers and economic success—and that this is not because of matters relating to personal interest, financial ability, or the quality of schooling received in the past, but instead because of factors relating to IQ (e.g., Gottfredson, 1998; Jensen, 1969).

In the U.S. and much of the developed world, many people tend to take for granted that children who do well on paper and pencil standardized tests are intelligent. But different cultures have different views of intelligence. In this respect, children who are considered intelligent may vary from one culture to another. Moreover, the acts that constitute intelligent behavior may also vary from one culture to another (Sternberg, 2007). There are currently countless empirical and theoretical studies that thoroughly debunk the suspicious racial thinking involved in IQ testing; with good examples being Schönemann (1997a, c) and Guttman (1992).

According to David Marks (2008), there is a consistently high correlation between population IQ and literacy scores in the range .83 to .98. This correlation exists within populations over time and across populations at any one time. In essence, intelligence and literacy tests are measuring the same thing. High IQ is equivalent to high literacy and low IQ is equivalent to low literacy. Since the inception of intelligence testing, testers have been inadvertently measuring literacy. The so-called “intelligence quotient” (IQ) is a misnomer for a construct that could more accurately be termed the “literacy quotient” (LQ). The literacy theory successfully explains three previously unexplained phenomena. Firstly, the so-called “Flynn effect,” in which IQ data show secular gains, has been shown to be an

¹⁸ See Professors Reuven Feuerstein and Alex Kozulin’s work in that line of research (e.g. Kaniel et al., 1991; Kozulin, 1998, a & b; 2008).

inevitable consequence of secular literacy gains. The Flynn effect is simply an artefact of improving literacy: when the literacy of a population improves, so does its ability to complete intelligence tests successfully.

It has been shown, for example, that tests that are highly novel in one culture or subculture may be quite familiar in the next. That is, even if components of information processing are the same, the experiential novelty to which they are applied may be different (Valsiner, 2000). Similarly, Fagan and Holland (Fagan, 1992, 2000; Fagan & Holland, 2002, 2007¹⁹) have demonstrated in a number of studies that IQ is a measure of knowledge. Knowledge depends on information processing ability and on the information given by the culture for processing. The term *intelligence*, in Fagan's theory, means information processing ability. Fagan assumes that not all have had equal opportunity for exposure to the information underlying the knowledge being quizzed on standard tests of IQ. Given such assumptions, if group differences in IQ are not accompanied by group differences in information processing ability, then group differences in IQ are due to differences in access to information. The authors concluded that racial groups do not differ in their ability to process new information (i.e., in intellectual ability) and that the search for racial differences in knowledge (IQ) should be directed toward differences in exposure to information. In short, their work convincingly demonstrated that providing equal opportunity for exposure to information to people of different races "eliminates" the gap in IQs. The authors suggest that providing a child with relevant information as soon as possible, as often as possible, as long as possible, and as clearly as possible, results in more knowledge. Delay and failure to provide knowledge will result in a poor knowledge base and, hence, a lower IQ.

An example of this phenomenon can be seen in a study by R. Serpell (1979), in which Zambian and English children were asked to reproduce patterns in three media: wire models, clay models, or pencil and paper. The Zambian children excelled in the wire medium with which they were familiar, while the English children were best with pencil and paper. Both groups performed equally well with clay. Thus, children performed better with materials that were more familiar to them, from their own environments. Similarly, Carraher, Carraher, and Schliemann (1985) studied a group of Brazilian children and found that the same children who were able to do the mathematics needed to run their street businesses were little able to do the same mathematics when presented in a more formal schooling context.

Cole et al. (1971) studied a tribe in Africa: The Kpelle tribe. In this study adults were asked to sort items into categories; however, rather than producing taxonomic categories (e.g., "fruit" for apple), Kpelle participants sorted items into functional groups (e.g., "eat" for apple). After trying and failing to teach them to categorize items taxonomically they were asked as a last resort how a "stupid" person would do the task. At that point, without any hesitation, they sorted the items into taxonomic categories! -- demonstrating that not only

¹⁹ In Fagan & Holland's (2007) recent study, African-Americans and Whites were asked to solve problems typical of those administered on standard tests of intelligence. Half of the problems were solvable on the basis of information generally available to either race and/or on the basis of information newly learned. Such knowledge did not vary with race. Other problems were solvable only on the basis of specific previous knowledge; knowledge such as that tested on conventional IQ tests. Such specific knowledge did vary with race and was shown to be subject to test bias. Differences in knowledge within a race and differences in knowledge between races were found to have different determinants. Race was unrelated to the *g* factor. Cultural differences in the provision of information account for racial differences in IQ.

were these participants able to do the presented tasks, but that in their own culture, what was considered intelligent by western standards was actually thought to be “stupid.”

Crawford-Nutt (1976) found that African black students enrolled in westernized schools scored higher on progressive matrix tests than did American white students. The study was meant to examine perceptual/cultural differences between groups, and demonstrated that one’s performance on western standardized tests corresponded more closely with the quality and style of schooling that one receives than on other factors. Buj (1981) showed Ghanaian adults in one study to score higher on a supposedly “culture fair” IQ test than did Irish adults; scores were 80 (Ghanaian) and 78 (Irish), respectively. Shuttleworth-Edwards et al. (2004) conducted a study with black South Africans between the ages of 19–30, where highly significant effects for both level and quality of education within groups whose first language was an indigenous black African language, was revealed. Black African first language groups (as well as white English speaking groups) with advantaged education were comparable with the US standardization in IQ test scores (e.g., WAIS-III).²⁰

Another study by Serpell et al. (2006) took 162 low-income African American and white fourth graders and randomly assigned them to ethnically homogeneous, communally structured groups of three to work on a motion acceleration task using either computer simulation or physical tools; or to a control group that did not participate in the learning activities. The results of the study showed African American and white students to perform equally well on the test of initial learning, with both groups scoring significantly higher than the control group. However, African Americans’ transfer outcomes were superior to those of their white counterparts (Serpell et al., 2006), suggesting that African American children are better at transferring learned skills.

In the U.S., when matched for IQ with whites, American blacks show superior “Working Memory” (Nijenhuis et al., 2004), an interesting finding, as African Americans are typically taught by less qualified teachers than their white counterparts and are provided with less challenging school work (Hallinan 1994; Diamond et al., 2004). In Chicago, for example, the vast majority of schools placed on academic probation as part of the district accountability efforts were majority African-American and low-income (Diamond & Spillane 2004).

Other empirical studies have shown that upward of 99% of group IQ score differences between black and white Americans are eliminated after controlling simply for cultural factors. For example, in one study published in the *Journal of the International Neuropsychological Society*, Manly et al. (1998) found that when cultural factors, such as linguistic behavior (e.g., black vs. standard English) are controlled between healthy black and white Americans, score differences on IQ tests, particularly WAIS-R (Wechsler Adult Intelligence Scale--Revised), become statistically insignificant in all but one area (a reading section)! Other researchers have shown similar results after controlling for cultural factors. For example, Fagan & Holland (2002) found that, where exposure to specific information was required, whites knew more about the meanings of sayings than did blacks (due to exposure). But, when comprehension was based on generally available information, whites and blacks did not differ (Fagan and Holland, 2002). This study also found that when blacks

²⁰ This particular information is compiled by Bernie Douglas (2009, personal communication).

and whites are matched as to comprehension of sayings requiring specific knowledge that blacks were superior to the whites (ibid).²¹

There are different kinds of tests, such as norm-referenced tests, criterion-referenced tests, learning potential assessment devices, dialect fair tests, and culture specific tests (see Williams, 1972). However, the norm-referenced tests are the ones that dominate the literature. In fact, all the tests in Lynn's book are norm-referenced tests, which means that what is of interest is to know how much a student's score deviates from the group mean, where as in the case of criterion-referenced measures the interest is to know how far the student's score deviates from a fixed standard, the criterion.

Robert Williams (1972) the creator of The Black Intelligence Test of Cultural Homogeneity, or BITCH-100²² wrote that

... of the most prestigious individual ability tests, the Binet, Weschler, and Peabody, systematically excluded Black children from the normative samples. The 1937 Stanford-Binet, standardized on 3184 American-born white children was in use 23 years before being replaced by the 1960 form LM revision. The latter used, 4,498 subjects in the normative sample. The WISC was standardized on a sample of 2,200 white boys and girls (Weschler, 1949). Another popular intelligence test, the Peabody Picture Vocabulary [Test], excluded black children from its standardization sample; 4,012 white children were used in the sample. Thus, no black children were included in several of the major individual tests for children. Norm-referenced tests have been exclusive and non-representative rather than inclusive and representative (p. 3)

Even Weschler (1944) himself has warned that his test was to be used exclusively for the white population stating the "...our standardization is based upon white subjects only" (p. 107). Beverly Daniel Tatum (1997) writes that dominant cultures often set the parameters by which minority cultures will be judged. Minority groups are labeled as substandard in significant ways; for example, blacks have historically been characterized as less intelligent than whites. Tatum suggests that the ability to set these parameters is a form of white privilege.

A large body of current research lends support to the conclusion that tests are not culture free. In addition, performance on those different tests can vary depending on the amount of exposure one receives through, for instance, mediated learning experiences. So

²¹ The above four paragraphs are compiled by my friend Bernie Douglas and he has even published a part of it in

http://www.africaresource.com/index.php?option=com_content&view=article&id=528:race-intelligence-and-iq-are-blacks-smarter-than-whites&catid=105:genetics&Itemid=360

²² The Black Intelligence Test of Cultural Homogeneity, or BITCH-100 is oriented toward the language, attitudes, and life-styles of African Americans. White students perform more poorly on this test than blacks, suggesting that there are important dissimilarities in the cultural backgrounds of blacks and whites (see Williams, 1972). Some argue that these findings indicate that test bias plays a role in producing the gaps in IQ test scores. Similarly to the Williams test, the Chitling Intelligence Test is another example of a culturally biased test that tends to favor African Americans. Both of these tests demonstrate how cultural content on intelligence tests may lead to culturally biased score results.

“intelligence” or cognitive functions of varied nature are modifiable. There is a plethora of data to indicate that "race," gender and social class differences in cognitive ability are strongly malleable and highly sensitive to situational and contextual variables (see Dambrun & Taylor, 2005, and references therein). In a recent study, Kozulin (2008) demonstrated that new evidence is presented that a basic cognitive function such as spatial memory is strongly culturally dependent and quite modifiable even in adult learners. The study was conducted in Israel with several groups of new immigrants from Ethiopia who were enrolled in a year-long educational program for young adults. Static administration of the Positional Learning Test demonstrated that these new immigrant students experienced considerable difficulty with spatial memory tasks. Learning potential (LP) assessment of spatial memory with the same task was then performed with two additional groups of new immigrant students. Though the groups had the same performance level in the static part of the test, their response to mediation was very different. This finding confirms that individuals with similar static performance may have very different LP. Students who demonstrated greater LP also benefited more from the *Instrumental Enrichment* intervention. The results of the study therefore suggest that LP assessment has added value for immigrant and minority students similar to those in this study, that spatial memory is both culturally dependent and modifiable, and that LP assessment may serve as a tool that can be helpful for planning cognitive education intervention.²³

Why schools, culture and social class count

It is also important to note that schools are an arena in which the “haves” get a lion’s portion of the educational input. Bourdieu & Passeron (1970) state that the primary effect of school is to broaden the gap between individuals and, consequently, make the dull duller and the bright brighter. How much effect does schooling really have in bringing about inequalities or equalities of school achievement? Are the differences in school achievements and/or learning efficiency attributable to differences in environment, family background, economic inequality, or just individual innate capacity differences, i.e. the "random inequalities of nature"? In Bourdieu's and critical theorists' views (e.g., Freire, 1985; Giroux & McLaren, 1994; Apple, 1982), the structure of relationship characterized by the “haves” and the “have-nots” serves to transform social advantages or disadvantages into educational ones through choices that are linked to social origins, thereby duplicating and reinforcing their influence.

John Dewey, one of the most influential of modern philosophers of education has built his entire philosophy around the plea for the education of the *Whole Child* and around the need for a full education in a true democracy. Bowles and Gintis (1977) in their book *Schooling in Capitalist America* confirm that schooling services the economy in four main ways in a capitalist society: “it teaches needed technical and cognitive skills; it inculcates appropriate personality traits; it encourages the acceptance of inequalities; and it fulfils this last function

²³ Very little is known about spatial memory in different cultures. One of the often quoted studies is that of Kearins (1981), who showed that spatial memory for arrays of objects in Australian aboriginal children is better than that of their better educated white peers. Boivin (1991) replicated this study with Zairian and Scottish elementary school children. Scottish children demonstrated a significant advantage in the easier positional memory tasks (household objects), but there was no difference between the groups in the more challenging tasks (geometric shapes) (Kozulin, 2008, p.71).

particularly in relation to the social class system” (p. 54). Schools, therefore, as agents of the larger system, or simply as educational institutions, replicate the hierarchical division of labour which dominates the work place and is anchored in the whole structure of society at large.

Bourdieu has argued that it is the culture (the ideology) of the dominant group(s)—the group(s) that control the economic, social, and political resources—that is embodied in the schools, and that it is this embodiment that works as a reproduction strategy for the dominant group. Therefore, poor achievement for some groups (and success for others) in a society is not something inherent in cultural difference *per se*, but is an artefact of the way schools operate. Those with the appropriate cultural capital are reinforced with “success,” while others are not (Bourdieu & Passeron, 1977; Bourdieu, 1986, 1988). Michael Foucault also analyzed how educational institutions are subject to discourse and how they control the access of individuals to various kinds of discourse.

It is obvious that the “haves” are in an advantageous position to perform better and excel in many ways and fields. The so-called *Matthew effect*²⁴ is relevant here. In his recent book Gladwell (2008) argues that people do not just happen to become successful. A long line of support systems including cultural legacies, familial, and a lot of other background factors play a crucial role. Selection, streaming, and differentiated experience are also important factors. The best example of this is the experience of hockey players in Canada:

The way Canadians select hockey players is a beautiful example of what the sociologist Robert Merton famously called “a self fulfilling prophesy”— a situation where “a self definition, in the beginning...evokes a new behaviour which makes the original false conception come true.” Canadians start with a false definition of who the best nine-and ten-year-old hockey players are. They are just picking the oldest every year. But the way they treat those “all-stars” ends up making their original false judgement look correct. As Merton puts it: “This specious validity of the self-fulfilling prophesy perpetuates a reign of error for the prophet will cite the actual course of events as proof that he was right from the very beginning.” (Gladwell, 2008, p. 33)

This is also true at groups (e.g., ethnic and sex groups) and nation levels. A good example is the phenomenon of what psychologists call “stereotype threat.” Members of stigmatized groups lag behind others partly because they have internalized the stereotypes. Some minorities do worse in academic and other settings merely because they expect to do worse. Their negative expectations produce stress and interfere with cognition. It is not only blacks in western countries, but also girls, disabled persons and even older people who can also become victims of their own low expectations (*Time*, 2009, June 1).

²⁴ The sociologist Robert Merton famously called this phenomenon the “Matthew Effect” after the New Testament verse in the Gospel of Matthew: “For unto every one that hath shall be given, and he shall have abundance. But from him that hath not shall be taken away even that which he hath.” It is those who are successful, in other words, who are most likely to be given the kinds of special opportunities that lead to further success. It is the rich who get the biggest tax breaks. It is the best students who get the best teaching and most attention. And it is the biggest nine-and ten-year olds who get the most coaching and practice. Success is the result of what sociologists like to call “accumulative advantage” (Gladwell, 2008, p. 30).

To return to the phenomenon of cultural legacy, on how it casts a long historical shadow and how they turn out to be more powerful than any other factor, Gladwell's (2008) account of rice paddies and math tests in China is worth mentioning. Rice paddies require difficult work and are labour intensive.

Rice paddies are "built" not "opened up" the way a wheat field is. You don't just clear the trees, underbrush, and stones and then plough. Rice fields are carved into mountainsides in an elaborate series of terraces, or painstakingly constructed from marshland and river plains. A rice paddy has to be irrigated, so a complex system of dikes has to be built around the field. Channels must be dug from the nearest water source, and gates built into the dikes so the water flow can be adjusted precisely to cover the right amount of the plant. (p. 225).

This complex system of handling (preparing, planting, weeding, harvesting and storing) requires a great deal of patience, discipline and perseverance. (For further reading see Francesca Bray's, 1994, *The Rice Economies: Technology and Development in Asian Societies*). Had it not been for this elaborate sort of planning and implementing, the survival of the Chinese farmers would have been at stake. The success of the Chinese students in some academic fields can be linked to this historical, cultural legacy of relentless and intricate pattern of agriculture. This cultural legacy, coupled with the linguistic structure of Asian language may have contributed a great deal to the success of maths performance among Chinese students. There is a big difference in how the number systems (e.g., the number naming systems) in western and Asian languages are constructed. Besides, these Asian languages are constructed in such a way to ease remembering number sequences. This difference in language structure doesn't only facilitate number memory but also Asian children learn to count much faster than western children²⁵. These examples come from Stanislas Dehaene's (1997) book, *The Number Sense*²⁶

Chinese number words are remarkably brief. Most of them can be uttered in less than one-quarter of a second /for instance, 4 is "si" and 7 "qi"). Their English equivalents—"four," "seven"—are longer: pronouncing them takes about one-third of a second. The memory gap between English and Chinese apparently is entirely due to this difference in length. In languages as diverse as Welsh, Arabic, Chinese, English and Hebrew, there is reproducible correlation between the time required to pronounce numbers in a given language and the memory span of its speakers. In this domain, the prize for efficacy goes to the Cantonese dialect of Chinese, whose brevity grants residents of Hong Kong a rocketing memory span of about 10 digits (in Gladwell, 2008, p. 228).

²⁵ The much storied disenchantment with mathematics among western children starts in the third and fourth grades, and Fusen (a north western university psychologist who has closely studied Asian-Western differences) argues that perhaps a part of that disenchantment is due to the fact that math doesn't seem to make sense; its linguistic structure is clumsy; its basic rules seems arbitrary and complicated (Gladwell, 2008, pp. 229-230).

²⁶ The logic of Asian numerals compared with their counterparts is discussed in Stanislas Dehaene's book *The Number Sense: How the Mind Creates Mathematics* (Oxford: Oxford University Press, 1997).

It is not an exaggeration, therefore, to state that the way your language system is constructed and the demands of growing rice make you better at different intellectual tasks. For Richard Lynn, however, the “superior” performance of Asian students in IQ tests is an innate matter; Asian proclivity for mathematics is connected to evolution and cold weather.

Based on empirical studies, Richard Nisbett (2003) in *The Geography of Thought: How Asians and Westerners Think Differently . . . and Why* has convincingly argued and substantiated the above statements with regard to the importance of culture. Nisbett focuses on differences between Eastern and Western thought, defining Westerners as people of European culture and Easterners as East Asian (including China, Korea, and Japan). He states that these two groups think differently and such differences may arise from aspects of culture: history, religion, philosophy, metaphysics, ecology (location), economy, social structure, attention, epistemology, etc. Nisbett opens his argument by comparing the ancient Greeks and Chinese as emblems of Western and Eastern thought. He attributes senses of personal agency and individual identity to the ancient Greeks, while characterizing their Chinese counterparts in terms of collective agency and harmony. His conclusion is that Asians and Westerners vary in what they perceive, how they process it, and what action they might take. Nisbett has studied seminal figures such as Aristotle and Confucius, the geographical and social origins of Greece and China, and clues from the languages involved. Studies by Nisbett and his colleagues show how those from Western cultural backgrounds tend to engage in context-independent cognitive processes and to perceive and think about the environment in an analytic way, whereas those from East Asian cultures tend to engage in context-dependent cognitive processes and to perceive and think about the environment in a holistic way (Miyamoto et al. 2006). I hope that Nisbett is aware of the complexity of the issue and that one should be careful not to reduce East-West to an ancient China-Greece polarity that excludes the variety of Asian intellectual cultures.

In several of Lynn’s articles and books, including the one we are discussing here, the intelligence of Africans is presented as the lowest. Some countries in Sub-Saharan Africa are said to have average IQs of 67. Some of the “Asian Tiger” nations of the Pacific Rim average out at 105. According to Lynn, the major factor determining why some nations such as the East Asians are rich has to do with their level of intelligence. Historical incidents, cultural matters, political processes, climate, or other social and physical environment are less interesting to Lynn. His conviction is that national IQs explain much of the variation among nations in a wide range of social and economic phenomena, and that differences in national/racial differences in IQ are linked to evolutionary processes.

A recent effort to compile lost treasures of Timbuktu in a remote Malian town, and to save Africa’s literary history from destruction is noteworthy as it shatters any lingering notion that Africa has no historic tradition of its own (*Time*, 2009). In those so-called low intelligence areas of the world, great achievements in the fields of science, technology and philosophy have been documented. The hallmarks of high cognitive skills by the natives were there.²⁷ “From as early as the Carolingian period— 7th to 8th century— African warriors were fighting in Europe under the banner of the lion, the shield, and the half-moon

²⁷ The association of Greek philosophers and Africa (Egypt and the Nile valley) is well documented. The best students of the Greek era were encouraged to go to Africa and do further studies under the African’s master’s tutelage. Thales of Miletus, Socrates, Plato, Pythagoras, Aristotle and many other influential intellectual figures of the ancient time have all benefitted from the well established and long rooted knowledge that existed in Africa.

in order to bring the ‘true faith’ Christianity or Islam, to Europe. Europeans at the time were in the majority heathen and did everything in their power to remain heathen” (*New African*, 2009, p. 13).

The portrayal of Africa as the dumbest continent has not started recently. The approach, methods, and modalities to channel the messages vary. This is in utter ignorance of the contribution of the African people in European philosophy, technology, art, literature, music, and the like²⁸. The “Oriental Moors”²⁹ or “the Cultured Ethiopians” had been dark skinned people but they had represented a culture far superior to that of the Europeans (see also, *New African*, 2011). Because Christ came from their corner of the world, they had embraced Christianity at a time when the religion was struggling to take root in Greece and Rome. The image of Africa changed in the 17th and 18th century in connection with colonialism; the people of Africa began sliding down the ladder of human kind. Just one good example is a statement made by the so-called cultural hero of America: In 1787, Thomas Jefferson [a slave owner who in March 1801 would become the third president of the United States of America, in *Notes on the state of Virginia*] wrote:

Comparing them (negroes) by their faculties of memory, reason and imagination, it appears to me, that in memory they are equal to the whites, in reason much inferior, as I think one could scarcely be found capable of tracing and comprehending the investigations of Euclid; and that in imagination they are dull, tasteless, and anomalous.... Yet Euclid, the world’s greatest mathematician, was an African! (*Ibid.*, p. 17).

The gist of my argument here is that there had been great other cultures with high levels of intellectual accomplishment and that all this eminence must be put into historical context with the fact that developed civilizations have differed considerably across cultures, within cultures, and across time. Attributing a genetic account or factor to these “fluctuating rates of accomplishment” (Nisbett, 2009) is untenable. According to Nisbett, changes in the gene pool are an impossible explanation for this enormous shift in the intellectual center of gravity.³⁰ There is ample evidence that members of certain societies would have performed better or worse at a whole range of skills (“intelligence”) tests at different points of their

²⁸ “Africans in Roman Britain—who married native women and begat children—held senior posts both in the administration and in the military, and a number of Africans governed Britannia on behalf of the Roman Empire and in Rome itself”. “Homogenous Anglo-Saxons”? ... (Marika Sherwood, a historian and an academic, in *New African*, 2010, p. 8).

²⁹ “The question of whether there are innate differences in intelligence between blacks and whites goes back more than a thousand years, to the time when the moors invaded Europe. The Moors speculated that Europeans might be congenially incapable of abstract thought. [A millennium earlier southern Europeans had their doubts about northern Europeans. Cicero warned the Romans not to purchase the British as slaves because they were so difficult to train, though Julius Caesar felt they “had a certain value for rough work”.] But by the nineteenth century most Europeans probably believed that they were genetically superior to Africans in intellectual skills. The IQ test, developed in the early twentieth century, reinforced the genetic view”. (Nisbett, 2009, p. 93)

³⁰ See Zimiles, Herbert. (2011 March 25) On Making Children Smarter: An Essay Review of Nisbett’s *Intelligence and How to Get It*. *Education Review*, 14(4). Retrieved November 13, 2011 from <http://www.edrev.info/essays/v14n4.pdf>

history. One would expect that in Roman times the Britons and Germans would have been put to shame on most “intelligence tests” devised by the Greeks and Romans and that in the 8th or 9th centuries most western Europeans would have lagged badly behind citizens of the Islamic world where literature, science, and arts then flourished. In U.S. society, there are still many jokes about the “stupid Poles and Irish” which, no doubt, reflect the fact that these immigrant groups lacked some skills that were considered valuable in America at the time (Berhanu, 2007).

Satoshi Kanazawa (2008) concludes that “the further away a nation is from Sub-Saharan Africa, both latitudinally and longitudinally, the higher the average intelligence of the nation’s population.” To confirm that he picked three extreme locations within Sub-Saharan Africa as a possible site of human evolution: the coordinate (0N 0E), which happens to be off the coast of Nigeria in the middle of the Atlantic ocean; the coordinate (30S 30E), which is on the southeast edge of present-day South Africa; and the coordinate (10N 40E), which is right in the middle of present-day Ethiopia. Regardless of how he measures evolutionary novelty, Kanazawa contends that the substantive conclusions remain the same: “The colder the climate, the higher the average intelligence.” I can count hundreds of facts that show that at one time in history these three locations (Ethiopia, Nigeria, and South Africa) have been a centre of civilization, advanced achievements and creativity: Ethiopia’s 11 underground medieval churches, the Ethiopian city of Axum (300 BC to 300 AD); Ethiopia minted its own coins over 1500 years ago; the Ethiopian script. In central Nigeria, West Africa’s oldest civilisation (the Nok civilisation-1000BC until 300 BC); the Nigerian city of Ile 1000 AD; Yoruba metal art of the medieval period; the medieval Nigerian city of Benin. South Africans mined gold on an epic scale and a large swath of ruined buildings show an ancient civilization developed by the natives. Egypt is also believed by many to be a fundamentally black African civilization. The climate in these locations has not changed dramatically during the past 2,000 to 3,000 years. However, progress that required rigorous cognitive skills had once been achieved.

Having reviewed Lynn’s book, Mackintosh (2007) commented:

A final argument is that group differences in intelligence led to differences in the extent to which different groups made the transition from a hunter–gatherer lifestyle to settled agriculture and later civilizations. It was, of course, not Europeans, but those classified by Lynn as north African and south Asian, with an average IQ of 85, who made the first transition to agriculture in the west, and it was this same racial group that developed the civilizations of the Indian sub-continent, as well as algebra and medicine at the time of the European dark ages. What can one say? Much labour has gone into this book. But I fear it is the sort of book that gives IQ testing a bad name. As a source of references, it will be useful to some. As a source of information, it should be treated with some suspicion. On the other hand, Lynn's preconceptions are so plain, and so pungently expressed, that many readers will be suspicious from the outset. (p. 95)

One important question that should be asked is why do we need to study race /group differences in intelligence? *Nature*, an International Weekly Journal of Science, initiated a debate with a title *Should scientists study race and IQ (2009)*? In the first of two opposing commentary Steven Rose, a neuroscientist and emeritus professor at the Open University, U.K. argued that studies investigating possible links between race, gender and intelligence do no good. He rightly summarized the commentary:

In a society in which racism and sexism were absent, the questions of whether whites or men are more or less intelligent than blacks or women would not merely be meaningless—they would not even be asked. The problem is not that knowledge of such group intelligence differences is too dangerous, but rather that there is no valid knowledge to be found in this area at all. It is just ideology masquerading as science. (p. 788)

Reliability and validity of IQ data

The IQs of the races... can be explained as having arisen from the different environments in which they evolved, and in particular from the ice ages in the northern hemisphere exerting selection pressures for greater intelligence for survival during cold winters; and in addition from the appearance of mutations for higher intelligence appearing in the races with the larger populations and under the greatest cold stress. The IQ differences between the races explain the differences in achievement in making the Neolithic transition from hunter-gathering to settled agriculture, the building of early civilizations, and the development of mature civilizations during the last two thousand years. The position of environmentalists that over the course of some 100,000 years peoples separated by geographical barriers in different parts of the world evolved into ten different races with pronounced genetic differences in morphology, blood groups, and the incidence of genetic diseases, and yet have identical genotypes for intelligence, is so improbable that those who advance it must either be totally ignorant of the basic principles of evolutionary biology or else have a political agenda to deny the importance of race. Or both. (Lynn, 2006, pp. 243-244)

The common assumption by many in the field of psychological assessment is that reliability is the extent to which a test is *repeatable* and yields *consistent* scores. In order to be valid, a test must be reliable; but reliability does not guarantee validity, i.e., it is possible to have a highly reliable test that is meaningless (invalid). Validity is the extent to which a test measures what it is supposed to measure. Validity is a subjective judgment made on the basis of experience and empirical indicators. Validity asks "Is the test measuring what you think it's measuring?" Reliability in this context is how replicable an IQ level is within each nation—telling us if a score is capturing something that can be fairly generalized. If a country is tested a second time or third time, the second and third score will look much like the first one. It is highly likely that cross-cultural reliability of the scores is high. That doesn't mean anything. The question is not about how the test is replicable; it is more about that it measures: a narrow "school based" and culturally biased sets of skills. It is not even surprising that the IQ performance is in agreement with performance in other intellectual domains. Validity can be defined in this context as, whether an IQ level predicts the same real world outcomes for one population as it does for the reference population. Different countries and populations have different values. For some population the priority can be to pursue academic fields further whereas for others it could be concentrating on income generating activities, family, and other social based activities. An example is, the difference between Ashkenazi Jews and Sephardic Jews in terms of career choices: The former tend to value more advances in academic endeavours while the latter concentrate on business. You definitely see some differences in IQ values between the two groups.

Lynn argues that the surveyed studies have high reliability in the sense that different studies give similar results and high validity in the sense that they correlate highly with performance in international studies of achievement in mathematics and science and with national economic development. He claims further that genetic factors are responsible for the gap in performances between different groups. That statement is misleading. The distorted data probably allow him to talk about the strength of relationships but not cause-and-effect relationships. Their correlation analysis does not establish causality because of the fact that correlation merely measures covariation. It is well known that, while statistical analyses can identify important associations between variables, they are inherently incapable of identifying cause-and-effect relationships. Indeed, it is equally well known that statistical analyses can also identify spurious “relationships.” For instance, we conjecture that it would have been possible to take random samples of subjects from various countries and correlate positively people’s average BMI (body mass index) with the economic success of their countries (measured by, say, GDP), leading to a spurious conclusion that obesity leads to economic (even technological) success. Of course, such a spurious conclusion would be very quickly dismissed as there is no “political agenda” to support it.

The test varies, the target group (in terms of age and other demographic variables) varies, and the sample size varies from nation to nation. The authors rely most on the non-verbal Raven’s Progressive Matrices, which were apparently designed to be used across cultures, even by illiterates. (The suitability of Raven’s Standard Progressive Matrices for various groups is highly questionable). Yet, they also have many results from the Wechsler examples, which are *more* culturally dependent—the Wechsler includes a vocabulary subtest, for example. The data deal with 181 countries: direct data from 61 countries and indirect from 120.³¹ The direct data were not collected by the authors directly, as they claim, but were published elsewhere in different journals and books spanning 50 or so years. The indirect data are just estimates based on their own criteria; for example, if a single test from Somalia gives an average IQ of 65, they infer that Kenya should be ascribed a figure near 65 based on “racial/ethnic compositions and neighbouring country IQ value,” a strange criterion and misguided assumption. This method was used to estimate the average IQ of 104 countries, i.e., by averaging those from “the most appropriate neighbouring countries.” For example Afghanistan’s IQ was estimated by averaging those from neighbouring India (IQ = 81) and Iran (IQ = 84) to give an IQ of 83.

The estimation process was flawed, but this is a secondary concern. The first consideration is the quality of the primary data. The primary data are grossly inadequate for two reasons: first, the sampling is sketchy at best and ludicrously insufficient at worst; second, the calculations of mean values from multiple samples and the method of adjustment to account for the “Flynn effect” are both fundamentally inadequate. Consider, first, a few examples of the primary data. The “national” IQ figure for Barbados is derived from a sample of 108 9–15-year olds. The figure for Ethiopia is derived from a sample of 250 15-year-old immigrants to Israel. The figure for Nigeria is derived from one sample of 86 adult men and one sample of 375 6–13-year olds. The figure for Sierra Leone is derived from one sample of 22 23-year-old skilled workers and one sample of 60 adults. The figure for Russia is derived from a sample (no sample size reported) of 14–15-year olds drawn from the city of Briansk. In no case do the data appear to be derived from samples that can plausibly be

³¹ In the new books (Lynn, 2006; Lynn & Vanhanen, 2006) some more countries are added to the list. The addition, however, does not change the overall picture or their thesis.

regarded as representative of the national populations discussed. (Dickins, Sear & Wells, 2007, p. 173)

Bias in mental testing has been acknowledged broadly, but Lynn tried to trivialize it. In Lynn's book internal and external test validity were not addressed at all. (No proper mention of content validity, predictive validity, concurrent validity, and construct validity). Evidence for test bias based on race was demonstrated in a recent study *Racial Equality in Intelligence: Predictions From a Theory of Intelligence as Processing*, by Fagan and Holland.

A similar bias, for tests based on knowledge of vocabulary, was reported for African-Americans and Whites by Fagan and Holland (2002) and by Naglieri and Rojhan (2001) who matched White students and African-American students for their performance on a standard test of intelligence and found that the African-Americans scored significantly higher than [sic.] the Whites on a test of information processing. In a previous report (Fagan & Holland, 2002) we noted that such demonstrations of test bias are unusual (Jensen, 1980). The present studies tell us that test bias can be consistently demonstrated. (2007, p. 328)

There is not only gross disregard for objective science but there are also horrendous mistakes and distortions.³² On reading the original reference, Hunt and Wittman (2008, p. 2) found that the "data point" that Lynn and Vanhanen used for the lowest IQ estimate, Equatorial Guinea, was actually the mean IQ of a group of Spanish children in a home for the developmentally disabled in Spain. Corrections were applied to adjust for differences in IQ cohorts (the "Flynn" effect) on the assumption that the same correction could be applied internationally, without regard to the cultural or economic development level of the country involved. While there appears to be rather little evidence of cohort effect on IQ across the developing countries, one study in Kenya (Daley, Whaley, Sigman, Espinosa, & Neumann, 2003) shows a substantially larger cohort effect than is reported for developed countries.

In response to *The Bell Curve*, Leon Kamin (1995) outlined Lynn's erroneous reference and analysis of data published elsewhere, and stated that the *The Bell Curve*'s authors used his data uncritically in order to reach the predictable conclusion that sources of racial-group differences on standard tests of intelligence are genetic. Lynn referred to all these works to strengthen his case. Kamin wrote that:

Lynn's 1991 paper describes a 1989 publication by Ken Owen as "the best single study of the Negroid intelligence." The study compared white, Indian and black pupils on the Junior Aptitude Tests; no coloured pupils were included. The mean "Negroid" IQ in that study, according to Lynn, was 69. But Owen did not in fact assign IQs to any of the groups he tested; he merely reported test-score differences between groups, expressed in terms of standard deviation units. The IQ figure was concocted by Lynn out of those data. There is, as Owen made clear, no reason to suppose that low scores of blacks had much to do with genetics: "the knowledge of English of the majority of black testees was so poor that certain [of the]

³² Lynn's distortions and misrepresentations of the data constitute a truly venomous racism, combined with scandalous disregard for scientific objectivity. Lynn is widely known among academics to be an associate editor of the racist journal "Mankind Quarterly" and a major recipient of financial support from the nativist, eugenically oriented Pioneer Fund (Kamin, 1995).

tests...proved to be virtually unusable.” Further, the tests assumed that Zulu pupils were familiar with electrical appliances, microscopes and “Western type of ladies” accessories. (Retrieved August 15, 2009, from Academic Search Elite database)

It is also noted that Owen’s 1992 paper again does not assign IQs to the pupils. Rather he gives the mean number of correct responses on the Progressive Matrices (out of a possible 60) for each group: 45 for whites, 42 for Indians, 37 for coloureds and 28 for blacks. The test's developer, John Raven, repeatedly insisted that results on the Progressive Matrices tests cannot be converted into IQs. Matrices scores, unlike IQs, are not symmetrical around their mean (no “bell curve” here). There is thus no meaningful way to convert an average of raw Matrices scores into an IQ, and no comparison with American black IQs is possible.

In response to Kanazawa's previous article (2006), which I mentioned earlier, that which expert statisticians/psychologists Alemayehu and Sineshaw (2007) wrote still applies in both Lynn’s and Kanazawa’s present work:

Experienced statisticians may see the role of chance in connection with the errors in the measurements of the variables, for example national IQ. Clearly, the analyses performed by Kanazawa were not intended to address the error in the variables, but instead to make inference when the concept of statistical inference does not apply. To emphasize the gravity of such misuse of statistics, Freedman et al. (1991, p. 508) warn, “... under these conditions, a test of significance is an act of intellectual desperation.” (p. 197)

Another dimension of the validity issue is a quick counting of the countries included in Lynn’s book for which average IQ is 75 or below: 30 countries. Does Lynn mean that the average person in these countries is borderline mentally retarded. According to Lynn, the average IQ of the populations of Sub-Saharan Africa in terms of U.K. norms lies below 70. According to Rushton and Jensen (2009), this low average IQ suggests that African adults have the cognitive ability of an average 11-year-old white teenager.³³

If Lynn had administered Raven’s Matrices test to his grandparents they would not have scored more than 60/70 IQ. Does this mean that his grandparents were retarded? Flynn argues that the rise in IQ represents a kind of modernization of the human mind driven by industrialization and the advance of scientific thought. Of our predecessors, he says (in Wikinson & Pickett, 2007, p. 162):

Their intelligence was anchored in everyday reality. We differ from them in that we can use abstractions and logic and the hypothetical to attack the formal problems that arise when science liberates thought from concrete referents. Since 1950, we have become more ingenious in going beyond previously learned rules to solve problems on the spot (Flynn, 2006).

Wicherts et al. (2009) outlined the problem of using Raven’s Progressive Matrices to test African samples. They questioned its so-called cultural fairness and recommended “caution

³³ Wicherts, J. M., et al., Raven's test performance of sub-Saharan Africans: Average performance, psychometric properties, and the Flynn Effect. *Learning and Individual Differences* (2009), doi:10.1016/j.lindif.2009.12.001.

in the use of these tests with Africans for selection purposes in education and the global market.” The authors concluded further that:

Factor analyses indicate that the Raven's tests are relatively weak indicators of general intelligence among Africans, and often measure additional factors, besides general intelligence. The degree to which Raven's scores of Africans reflect levels of general intelligence is unknown. Average IQ of Africans is approximately 80 when compared to U.S. norms. Raven's scores among African adults have shown secular increases over the years. It is concluded that the Flynn Effect³⁴ has yet to take hold in sub-Saharan Africa.³⁵

Besides, Lynn and co-workers use convenience samples (Wicherts et al., 2009, 2010a, 2010b). Use of samples of convenience violates fundamental principles of research methodology and elementary statistical inferences to draw conclusions about populations, tests of significance when there is no theoretical basis to do so, and the confounding of association with causation. A good example that questions the validity of the IQ data compiled in Lynn's book is:

The correlation between the IQ scores from Kanazawa (2006³⁶) and the UN literacy scores is .859 ... for female literacy and .831 ... for male literacy. In both cases, the relationship is linear and highly significant. Thus, differences in IQ test scores are confounded with equally large differences in literacy. IQ test scores among populations with low levels of literacy are bound to be significantly reduced while those with high levels of literacy will be significantly higher. (Marks, 2007, p. 181).

In an article entitled “*The dangers of unsystematic selection methods and the representativeness of 46 samples of African test-taker*,” which appeared in the recent issue of *Intelligence*, Wicherts et al., (2010) critiqued the methodology of Lynn and co-workers (such as Rushton, 2000; Malloy, 2008; Templer, & Arikawa, 2006). Although the very tradition of mental testing and in particular cross-cultural comparisons are questionable and replete with methodological flaws, Wicherts and colleagues who are in the same field of “mental testing, measurement and statistics” could easily detect a disparity or call it an error close to 12 IQ scores between their systematic work and Lynn's unsystematic methods:

³⁴ “Proposed causes of the Flynn Effect include improvements in test-specific skills (Greenfield, 1998; Wicherts et al., 2004), improvements in nutrition (Lynn, 1989, 1990), urbanization (Barber, 2005), improvements in health care (Williams, 1998), a trend towards smaller families (Zajonc & Mullally, 1997), increases in educational attainment (Ceci, 1991), greater environmental complexity (Schooler, 1998), and the working of genotype by environment correlation in the increasing presence of more intelligent others (Dickens & Flynn, 2001). Many of these environmental variables have not undergone the improvement in developing sub-Saharan African countries that they have in the developed world over the last century. This suggests that the Flynn Effect has great potential in sub-Saharan Africa (Wicherts, Borsboom, & Dolan, 2010b)”(Wicherts, J. M., et al., doi:10.1016/j.lindif.2009.12.001).

³⁵ Wicherts, J. M., et al., Raven's test performance of sub-Saharan Africans: Average performance, psychometric properties, and the Flynn Effect, *Learning and Individual Differences* (2009), doi:10.1016/j.lindif.2009.12.001.

³⁶ The national IQ data were taken from Lynn's & Vanhanen's (2002). The same data has been used frequently with different variables to find correlation including the two works which are the subject of review here.

In light of all the available IQ data of over 37,000 African test takers, only the use of unsystematic methods to exclude the vast majority of data could result in a mean IQ close to 70. On the basis of sound methods, the average IQ remains close to 80. Although this mean IQ is clearly lower than 100, we view it as unsurprising in light of the potential of the Flynn Effect in Africa (Wicherts, Borsboom, & Dolan, 2010) and common psychometric problems associated with the use of western IQ tests among Africans (p. 35).

In *Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and Activists*, Joe Best (2001), professor of sociology at University of Delaware, details the twisted course statistics often take as they mutate into bar-chart monsters with little if any relation to the original numbers or reality. The famous phrase "Lies, damned lies, and statistics" associated with Mark Twain describes the persuasive power of numbers, particularly the use of statistics to bolster weak arguments. Best's book provides an in-depth analysis of how social problems are *constructed* and who has what to gain through their *construction*. His concept "mutant statistics" —distorted versions of the original figures—is relevant here. Best argues that not all statistics start out bad, but any statistic can be made worse. Numbers—even good numbers—can be misunderstood or misinterpreted. Their meanings can be stretched, twisted, distorted or mangled. Lynn's and Vanhanen's IQ data (2002, 2006) have been used uncritically by many researchers. The same data have been correlated with infant mortality rates, crime rates, GDP, religion, conservatism vs. liberalism, programs for international student assessment, and more.

The problem of heritability estimates of IQ

So widespread are errors in this literature that the critical reader now has good reason to doubt every article published on this topic and to check the arithmetic, algebra, and original references before seriously considering the "findings" and conclusions. The pitifully low standards of scholarship of many who write on the heritability of IQ are scandalous and unforgivable (Wahlsten, 1981, p. 33).

Space doesn't allow me to go through the arithmetic, algebra and references and present all the pervasive shortcomings and inconsistencies in the field. For the purpose of this review, it is sufficient to outline the major fallacies (i.e., methodological, analytic, and interpretation flaws). Most hereditarians are convinced of the existence of one unilinear construct of general intelligence; and they believe that all tests of intelligence have positive correlations (loadings) on this general factor and called this factor general intelligence, *g*. A reasonable rebuttal is that *g* is not a psychological phenomenon and is simply a statistical artefact derived from assumptions of linearity in data arising from multiple interacting causes.

A number of serious studies demonstrate that there is no credible evidence that IQ tests measure either an inborn property or so-called intelligence (e.g., Hirsch 1970, 2004; Schönemann, 1997a, b, c, 2005; Capron et al, 1999; Vetta, 2002, Capron and Vetta, 2006). When Lynn and his associates state that intelligence is substantially inherited, they usually refer to twin and adoption studies.³⁷ The twin and adoption studies have been vigorously

³⁷ We all know that the most widely cited work in this direction is Burt's work and numerous studies have revealed that Cyril Burt was an all-around fraud: A year after Burt's death, Princeton psychologist Leon Kamin began to scrutinize his statistics and found major flaws. For one thing, in

criticized for methodological flaws, and lack of statistical validity and predictive value. There is little reason to believe that twin studies provide evidence in favor of genetic influences on psychiatric disorders and human behavioral differences (Joseph, 2002). As stated earlier, the principal evidence that they refer to again and again is that *identical twins reared apart in differing life circumstances are much more similar intellectually than fraternal twins reared under the same roof*. This so-called principal type of evidence that leads to the conclusion that intelligence is substantially genetically determined and from which its heritability can be calculated is a substandard argument that lacks scientific rigour. However, twin studies are frequently cited in support of the influence of genetic factors for a wide range of psychiatric conditions and psychological trait differences. I strongly recommend that the reader check Nisbett's (2009) Chapter 2, *Heritability and modifiability* where the author convincingly discusses the four sources of error in this so-called principal type of evidence (twin studies).

Although mounting evidence (e.g., Nisbett, 2009, and references therein) demonstrates that heritability estimates constitute sub-standard scholarship, this did not stop many hardnosed hereditarians from promoting the idea that IQ is heritable and that it predicts academic success and job status including national wealth, health status, infant mortality, and crime rates.

The prominent mathematician and psychometrician Peter Schönemann (1997) wrote on the models and muddles of heritability and why the heritability claims persist in the face of mounting evidence to the contrary:

One reason for the astonishing persistence of the IQ myth in the face of overwhelming prior and posterior odds against it may be the unbroken chain of excessive heritability claims for "intelligence," which IQ tests are supposed to "measure." However, if, as some critics insist, "intelligence" is undefined, and Spearman's *g* is beset with numerous problems, not the least of which is universal rejection of Spearman's model by the data, then how can the heritability of "intelligence" exceed that of milk production of cows and egg production of hens? ... [T]he answer to this riddle has two parts: (a) the technical basis of heritability claims for human behavior is just as shaky as that of Spearman's *g*. For example, a once widely used "heritability estimate" turns out to be mathematically invalid, while another such estimate, though mathematically valid, never fits any data; and (b) valid technical criticisms of flawed heritability claims typically are met with stubborn editorial resistance in the main stream journals, which tends to calcify such misinformation. (p. 97)

three different studies of different numbers of identical twins, Burt reported the same statistical correlation of IQ scores to the third decimal point, which is incredible. There were similar flaws in Burt's reports dating back as far as 1909 (Francisco Gil-White, 2004, *Resurrecting Racism: The modern attack on black people using phony science*). see also *The Lewis Legacy-Issue 73, Summer 1997*; "In The Footsteps Of Sir Cyril Burt And Bruno Bettelheim"; By Kathryn Lindskoog; *The C. S. Lewis Foundation for Truth in Publishing*; June 1, 1997. In the words of Stephen Gould (1981, 1996), Sir Cyril Burt juggled, finagled, and fabricated data to support his own research in an attempt to confirm the superiority of the Caucasian race and place North Europeans at the apex of civilization and the rest of the human race lagging far behind.

In memory of Jerry Hirsch, a pioneer in the field of behavior genetics and crusader for social justice, Schönemann (personal communication, 2009) recently wrote about how Hirsch wiped out with one bold stroke the whole heritability estimation lore that had exercised psychologists for decades, not just on technical grounds (Schönemann, 1997; 2008), but in principle: As long as genes interact with environment—an assumption that is usually precluded by definition in derivations of heritability estimates—common sense implies that it becomes impossible to assign proportional contributions of heredity and environment to behavioural observations, regardless of the math. The relationship between genetics and intelligence has been amply disputed elsewhere (e.g., Capron, Vetta, Duyme & Vetta, 1999; Hirsch, 1997; Roubertoux & Capron, 1990). According to Schönemann, what incensed Hirsch more than anything about the quickly mushrooming Jensenism fad was its uniform lack of elementary scientific standards. Everything was made to appear easy: Simply administer a list of puzzles to the subjects, count the number of correct answers, and then use a computer program to arrive at “heritabilities” that far exceed anything competent geneticists working with animals ever could match—no mess, no bother. In his appraisal of the scientific merits of this kind of research Hirsch was not alone. (Schönemann, 2008) The doyen of quantitative genetics, Oscar Kempthorne, was equally appalled:

... the separation of genetic and non-genetic forces with observational rather than experimental data is hopelessly difficult.... The obscurity about the nature of IQ tests makes the interpretation of social differences in IQ entirely a matter of very subjective opinion.... We have to ignore the writings of Burt, Jensen, and, particularly, Shockley (Kempthorne, 1997, p. 111).

The whole idea of intelligence as conceived by Lynn and Kanazawa is that there is a single gene responsible for intelligence, which is preposterous. Intelligence is a highly complex cognitive function that is influenced by many factors, both genetic and environmental. Neither psychologists nor neuroscientists have yet to reach an adequate definition of intelligence. How, then, can anyone claim to measure its heritability? It is a clear example of explaining psychological phenomena in terms of a single underlying factor. All these studies would seem to be a prodigal waste of research funding and resources.

A case in point is how some hereditarians jumped to a big conclusion with the news that a study conducted with rodents showed that one could increase cognitive and mental abilities by gene manipulation, and that there is a single gene responsible for intelligence. The interesting thing is the temptation to extrapolate studies conducted with rodents to human beings. In that specific study the researchers enhanced mouse embryos with an extra NR2B gene linked to long-term memory and increased cognitive and mental abilities. The resulting animals (called “Doogie Howser” mice) seemed to move more quickly through mazes than the mice that had not been altered (Tang et al., 1999). Immediately, the question arose about whether such interventions should be undertaken on humans. Yet subsequent research, by other scientists, showed that the genetic intervention had a downside. The Doogie Howser mice were more susceptible to long-term pain. (Wei et al. 2001)³⁸ The late Stephen Jay Gould expressed his grave concern about the frantic assumptions and questions that followed on whether such interventions should be undertaken on humans:

³⁸ See, also, Rick Weiss, “Study: Rodents’ Higher IQ May Come At Painful Price,” *The Washington Post* (29 January 2001): A2.

Pundits in our age of rapid misinformation will surely transmit the story as a claim that *the* gene for intelligence has been cloned and that a human smart pill for routine production of kiddie geniuses lies just around the millennial corner. None of this punditry, however, will bear any relationship to current realities or reasonable prospects for the short term future. Even so, the mice studied by Tsien et al. could help us correct two common errors in our thinking about genetics and intelligence: (1) the labelling fallacy: complex organisms are not the sum of their genes, nor do genes alone build particular items of anatomy or behaviour by themselves.... [W]e fall into a deep error, not just a harmless oversimplification, when we speak of genes “for” particular parts of behaviours.... The very notion of a gene “for” something as complex as “intelligence” lapses into absurdity. Intelligence is an array of largely independent and socially defined mental attributes, not a measure of a single something, secreted by one gene, measurable as one number and capable of arranging human diversity into one line ordered by relative mental worth....(2) The compositional fallacy. Just as each gene doesn’t make a separate piece of an organism, the entire organism cannot be regarded as a simple summation of relevant building codes and their action (a skeleton is not a head gene added to a neck gene added to a rib gene, etc.). The fact that human complex systems like human mentality or anatomy can be easily disrupted by deficiencies in single factors does not validate the opposite claim that enhancement of the same factors will boost the system in a harmonious and beneficial manner (Gould, 1999, p. 60)

Lynn and Kanazawa’s, quagmire of statistics—a veritable barrage of charts, graphs, tables and other techniques—is meaningless if the underlying assumption is wrong. The so-called scientific language is, of course, unfamiliar to many readers. And, on close examination, this scientific emperor is wearing no clothes. As Sternberg et al. (2005) point out, research based on IQ scores has not identified the genes for intelligence, and studies of heritability using IQ scores do not allow us to conclude anything about the heritability of between-population variation in IQ (also Nisbett, 2009). Cooper (2005) agrees and notes that there is no theoretical reason within the evolutionary model to expect racial differences in intelligence. He goes on to point to the historical inequity of cultural circumstance between African Americans and whites, an inequity that makes a biological explanation of racial differences in IQ implausible (Fagan & Holland, 2007, p. 328). In their publication entitled *Racial equality in intelligence: Predictions from a theory of intelligence as processing*, Fagan and Holland demonstrated that their data offer no empirical support for Jensen’s (1998) [Lynn’s and associates’ main reference] view that racial differences in IQ are due to differences in *g*. They wrote

Our results do not stand alone. Helms-Lorenz, Van de Vijver, and Poortinga (2003), in a study of majority-group children and second-generation migrant children in the Netherlands, found that performance differences between majority and minority-group members were best predicted by a cultural factor rather than by a general cognitive factor. Moreover, a series of investigations by Dolan (2000), Dolan and Hamaker (2001), Dolan, Roorda, and Wicherts (2004), and Lubke, Dolan, and Kelderman (2001) have used multi-group confirmatory factor analysis to ask if differences in IQ between minority groups and majority groups from various cultures can be shown to be due to differences in *g*. The general import of the Dolan re-analyses is that it is

impossible to draw any clear conclusion on the basis of such studies as to racial group differences in IQ being due to differences in g. (p. 329)

The concept of evolution and natural selection

The IQ tests administered in the 19th and early 20th century in the U.S. to new immigrants showed that the Jews, Russians, Italians, and Hungarians scored very low, which label them as “feeble-minded.” We all are familiar with the so-called Polish “jokes” (subhuman intelligence jokes) because the Poles scored the lowest of all groups of new arrivals. The great majority of Jewish immigrants in this period had been described in pejorative terms that actually resulted in restricting their entry to the U.S. Untold numbers who were denied entry perished at the hands of the Nazis. Lynn wrote that “there is considerable evidence that Ashkenazim Jews in the United States and Britain have substantially higher IQs than Gentiles.”(p. 94).³⁹ What happened then in terms of evolution that caused a “cognitive quantum leap” among the American Jews within less than 60 years that elevated their IQ performance from the level of feeble mindedness to “substantially above Gentiles? Lynn also wrote that the Chinese were the cognitive elites in the global distribution of intelligence. Asian immigrants of the late 1800s were portrayed in mainstream U.S. culture as “inherently immoral, dangerous and addicted to drugs” (Knowledge unlimited, 1987, in Pepi Leistyna, 1999, p. 136). In 1902, propelled by this concocted fear of the “yellow peril,”⁴⁰ Congress passed the Oriental Exclusion Act, which virtually eliminated all immigrants from the Far East’ (Leistyna, 1999).

Likewise, Helen Meekosha (2006) wrote how race is used in Australia to refer to non-Anglo peoples from non-Caucasian genetic stock. For instance, the Chinese were banned from immigration to Australia because, it was argued, they were detrimental to the political economy (undercutting wages and employment standards), but also because of their biosocial impairments (they were incapable of understanding ideas of equality and democracy). As the anti-Chinese campaign grew during the late 19th century, race and disability became intertwined, as in the following editorial from *The Bulletin*, a radical nationalist weekly in Sydney:

We claim to be a civilized people; we claim that one of the reasons we should exclude the Chinese is that they belong to an “inferior” race; we claim to be the inheritors of centuries of intellectual and moral culture. . . . Centuries of culture have superimposed the artificial and civilized man upon the bedrock of naturalism, and the civilized man is a stickler for justice; for consideration for the weak and the undefended, the oppressed, the imbecile and incompetent. (Anon 1888, in Meekosha, 2006, p. 167)

³⁹ In a non-empathic manner, Lynn further stated that “Most of the Ashkenazi Jews in the United States and Britain fled persecution in Russia and eastern Europe between 1880 and 1914 and in Germany between 1893 and 1939. It seems likely that these would have been the more intelligent who foresaw the dangers of staying and were able to organize emigration. Those who remained in Russia and Eastern Europe would likely have been a little less intelligent. These are the ones who emigrated to Israel after World War II to escape persecution and poverty and whose IQs are a little lower than those of Ashkenazim Jews in the United States and Britain.” (p. 95)

⁴⁰ The term refers to the skin colour of East Asians, and the belief that the mass immigration of Asians threatened white wages and standards of living.

We see in these policies the belief that race was in and of itself impairment, a bio-cultural condition that rendered non-white people unfit for white society and at the same time, an indicator of their inferiority being their incapacity to consider the “imbecile and incompetent.” As though their very presence represented a disease, Chinese people had to be leached from the society, as they are even lesser beings than the white society’s disabled population (Meekosha, 2006).

Chapters 15-17 of Lynn’s book discuss “Climate, Brain Size, Intelligence and Evolution.” These three closely related last chapters, which begin with a summary of the work and theories of Harry Jerison, regarding intelligence, evolution and brain size, cover Lynn’s evolutionary theory of racial differences. Lynn’s main agent of racial differences in intelligence is relative exposure to two recent ice ages, one 77,000-50,000 years ago, and another, more severe one 28,000-10,000 years ago, which he argues increased the intelligence of Europeans and East Asians significantly above that of other world populations. Space does not allow a critical examination of all the references he used, and as is true for most evolutionary psychology, the theories and assumptions are implausible. Generally, there is no evidence to suggest that the differences in intelligence between populations are genetic, and definitely there is no convincing material that intelligence follows a pattern consistent with the theory. No evidence is offered in Kanazawa’s recent work either nor in his earlier work. (Kanazawa, 2004) Both authors argue that human mental abilities arrived at their recent state through evolution and that the Darwinian revolution was one of the most enriching events in the history of the study of mental abilities.

Neanderthals may have had bigger brains but humans appear to have inflicted the deadliest wounds. One of several competing theses on the mysterious extinction of our closest prehistoric relatives is that our sister species may have been killed by humans as the contact between them was often violent (Churchill et al., 2009; *Time*, 2009). The mysterious disappearance of the Neanderthals coincided with the spread of modern humans out from Africa which happened around 30,000 years ago. If it is assumed that the Neanderthals have bigger brains, how could it be possible that they may have been eliminated by humans? Or how could they be starved to death? Is it really because of their inability to use projectile weapons to hunt on open plains when their arboreal hunting grounds were affected by the climatic change around 45,000 years ago? The climate was then characterised as volatile which shrank their hunting grounds. Lynn has suggested that the defeat, or properly said, the genocide of native Indians by Europeans has to do with the lower intelligence of Native Indians.⁴¹

⁴¹ At the time of Columbus’s arrival in the Americas, the Aztec were using math, astronomy and agriculture that was superior to Europeans. If it were not for contact with South American Amerindians (initially by accident) much of Europe would have likely died of starvation, as the continent was experiencing severe famine at the time. It was South American agriculture and crops that saved Europe from near death. Ironically, in exchange for this vitally needed learning the Europeans inadvertently killed off between 80% and 95% of Amerindian populations, completely wiping out many Aboriginal Caribbean native groups with new-world diseases, and then slavery. Committing genocide or instigating it has not yet become the thing of the past. Referring to a devastating report on France’s role in Rwandan genocide, Stephen Kinzer (2008) wrote “all who study the Rwandan genocide, as I did while researching a book about that ill fated country, come away stunned by what they learn about French support of mass murder. France was so eager to defend a client regime against English speaking rebels that, as the new report asserts, it gave that

Why Lynn and Kanazawa consistently follow just one line of assumption for the postulated differences in IQ among groups is puzzling, particularly in the face of mounting evidence for the cultural, historical, social, climatic, economic policies and a plethora of environmentally conditioned variables. In particular, there is mounting evidence for cultural influences on racial-group differences on standard tests of intelligence (e.g., Nisbett, 2009; Sternberg, 1997, 2001, 2007; Graves, 2002; Marks, 2008; Fagan & Holland, 2007; Capron et al. 1999). No doubt innate abilities are used by people when they tackle IQ tests, but it is unlikely that such abilities evolved under selection pressure for this kind of problem solving.

Intelligence scales are culturally embedded artifacts designed to meet the idiosyncratic needs of postindustrial western societies, and reflect the equally idiosyncratic assumptions found in the west—such as our habit of referring to someone as “brainy” when we mean “intelligent”, and the widely held assumption that brains got bigger during human evolution because of selection pressure for “intelligence” (and/or language: e.g., Deacon 1992). The idea that human intelligence is the pinnacle of biological evolution may be little more than colonialist propaganda, suggesting that “scientific” societies are the pinnacle of cultural evolution—and hence morally entitled to dominate others who formerly managed perfectly well without the blessings of “modernity.” <http://neuroanthropology.net/2008/12/21/how-intelligent-are-intelligence-tests-whitehead-responds/>

In an earlier article, Kanazawa concluded that individuals in wealthier and more egalitarian societies live longer and stay healthier, not because they are wealthier or more egalitarian but because they are more intelligent (Kanazawa, 2006). In response to Kanazawa’s article, Ellison (2007) wrote:

Individuals from sub-Saharan Africa are less healthy because they inhabit an environment that exerts little selection pressure for improvements in intelligence that would benefit their health. Notwithstanding that premature mortality and shorter life expectancy should constitute ample selection pressure for adaptations that improve health wherever these are possible, Kanazawa’s thesis paints a picture of contemporary African environments as archaic and lacking in the complex and evolutionarily novel problems posed by more “modern” environments elsewhere—problems that, he believed are required to facilitate the selection of improvements in intelligence as an adaptive response. As such, his thesis depicts populations in sub-Saharan Africa as evolutionarily primitive and genetically unintelligent. Moreover, the emphasis placed on the relationship between “national IQ” and health suggests that the poorer health of sub-Saharan populations is the result of their lower “national IQ” and not (as his multivariate analyses of the 29 countries from sub-Saharan Africa actually suggest) due to poverty and inequality. Paul Collins, from the charity War on Want (cited by Campbell, 2006), points out that this interpretation “runs the risk of resurrecting the racist stereotype that Africans are responsible for their own plight” and thereby deflecting attention away from efforts to support economic development in sub-Saharan Africa,

regime political, military, diplomatic and logistic support and directly assisted its genocidal campaign.” (p. 4)

because, according to this thesis, there is little that can be done to address the root cause: genetically inferior levels of intelligence. (p. 204)

Evolutionary psychology is a problematic field of study. Its main occupation is to explain psychological traits such as memory, perception and language, as adaptations, that is, as the functional products of natural selection. There is very little hard evidence to draw any conclusion on the behaviour of our ancestors. Another major problem with the field is that it starts off with a strongly set theoretical position, trying to get the evidence to fit around it by speculation. For my part, I have a hard time classifying it as a regular science as it lacks rigour and credibility in its instances (also Rose & Rose, 2001). To quote Ellison again:

Evolutionary psychology certainly faces a number of problems before it will be recognized as a science by many biological and social scientists (Rose & Rose 2001), and in the meantime the credible benefits of what some have called “Darwinian medicine” —the application of evolutionary theory to improve our understanding and treatment of disease (Nesse & Williams, 1994) —struggles to emerge from the shadow cast by popular notions of adaptive behaviour, not least when these notions simply reflect social prejudice. Nonetheless, were evolutionary psychology to adopt a more reflective and self-critical approach—one which generated (and tested) testable hypotheses, and which applied sceptical speculation to untestable hypotheses—there is no reason why it should not be recognized as a valid perspective on human behaviour and society. As ever, the key challenge facing evolutionary psychology is to learn from a range of different disciplines, biological and social, and to triangulate using the different analytical perspectives these disciplines can bring. (Ellison, 2007, p. 213)

At the heart of all these biological deterministic thoughts including the statement made by Vanhanen in his private mail to me—which reads “Our point is that differences in national IQs reflect the evolved human diversity. Nobody is responsible for those differences, not rich nor poor countries. Such differences are consequences of evolution through natural selection, which is not controlled by anybody” —is the concept of biological progress describing some products of evolution as more advanced than others. In many of his scientific works, Stephen Jay Gould has argued how this concept of evolutionary progress has contributed directly to the rise of Nazism. Gould wrote, “Progress is a noxious, culturally embedded, untestable, nonoperational, intractable idea that must be replaced if we wish to understand the patterns of history.” (Gould, 1988, p. 319) As expected, some psychometricians and evolutionary biologists have questioned Gould’s rejection of progress. (See Rushton, 2004)

Cavalli-Sforza and his colleagues reported in 1997:⁴²

It is often taken for granted that the human species is divided in rather homogeneous groups or races, among which biological differences are large.... Differences among continents represent roughly 1/10 of human molecular

⁴² Guido Barbujani, Arianna Magagni, Eric Minch, and L. Luca Cavalli-Sforza (1997) “An apportionment of human DNA diversity.” *Proc. Natl Acad Sci U S A*. 1997 April 29; 94(9): 4516–4519.

diversity, which does not suggest that the racial subdivision of our species reflects any major discontinuity in our genome. (p. 4517)

Ning Yu et al. (2002) recently demonstrated that their finding is more in agreement with the out-of-Africa model of human evolution than with the multi-regional model because it is consistent with the view that a smaller subset of this population later migrated to other parts of the world (see Stoneking et al., 1997, and references therein). During and after the migration some variants would have been lost and, as the separation time is still short, non-Africans have not yet acquired many high-frequency variants, though they might have derived some variants from indigenous archaic populations in Asia and Europe. For these reasons, the genetic differences between non-Africans and Africans are on average smaller than the genetic differences within Africans.

The account of Cavalli-Sforza and his colleagues is supported by a mountain of independently confirmed facts. In a fascinating and well-acclaimed book *Guns, Germs, and Steel*, Jared Diamond (1997) has shown that the differences in technological and productive complexity between Eurasia and Africa follow directly from ecological and geographic differences. Unlike Eurasia, Africa was not blessed with: (1) A favorable climate. This is of big help for the extraction of surpluses and for travel. But neither the African tropics, nor the deserts, nor the savannahs are very favorable compared to the environments in the temperate zones of Europe and Asia. (2) An East-West axis. An East-West axis means that a great deal of easy travel can happen within the same relatively invariant ecological zone (because ecology changes much more with latitude). Many innovations can thus spread by diffusion between societies arranged on an East-West axis. Africa has a North-South axis, which means that traveling long distances will often require mastering a number of different environments. (3) Plant and animal species that could be easily domesticated. Africa didn't have much in the way of native domesticable grains, and its soils are not very productive. In addition, for example, though you can domesticate a horse and ride it, you cannot do this with a zebra (people have tried it!). Gazelles and antelopes panic if you pen them, so they cannot be herded; and in any case, herding economies (which do occur in Africa) do not lend themselves to much complexity). This all made the production of surpluses, and the spread of innovations, difficult in Africa, which became an obstacle on the social complexity that could be achieved. So if African societies have been less technologically advanced, there is no reason to suppose that this is a consequence of differences in native mental ability. Diamond wrote:

In short, Europe's colonization of Africa had nothing to do with differences between European and African peoples themselves, as white racists assume. Rather, it was due to accidents of geography and biogeography—in particular, to the continents' different areas, axes, and suites of wild plant and animal species. That is, the different historical trajectories of Africa and Europe stem ultimately from differences in real estate."(pp. 400-401) ... some environments provide more starting materials, and more favorable conditions for utilizing inventions, than do other environments. (p. 408)

In Chapter 16, Lynn devoted a great deal of space to present selected studies that show brain-size and IQ correlations within race and that race differences in brain-size have been documented. These studies are, however, contentious and full of theoretical, analytical, and methodological problems. As expected, the conclusion is that there are brain-size differences among human racial groups (i.e., Mongoloids, Caucasoids, and Negroids) and

that brains of East Asians average larger than those of Europeans, whose average brain-size is larger than those of Africans. Any rational person will quickly dismiss these findings as nonsense. Unfortunately, these data on the differences between the brains of blacks and whites are still used today to substantiate preconceived ideas. Lynn and associates argue that race differences in average brain-size are firmly established. As such, brain-size related variables provide the most likely biological mediators of the race differences in intelligence. (Rushton & Rushton, 2003) It is well known that there are brain differences between men and women, and yet women and men score the same, on average, on different tests. I recommend that the reader check Nisbett's (2009; see Chapters 2 & 6) balanced and fair critique of this line of research. As Nisbett wrote:

And a group of people in a community in Ecuador have a genetic anomaly that produces extremely small head sizes—and hence brain sizes—yet their intelligence is as high as that of their unaffected relatives, and their academic achievement is substantially greater than that of most people in their communities. The direction of recent evolution over the last few thousand years, incidentally, is toward smaller brain sizes for humans. And I note just for interest's sake that Albert Einstein's brain was decidedly smaller, at 1,230 grams, than the overall average found by blacks in the studies by Rushton. (p. 96)

Conclusion

This essay review is three pronged. First, it was written as a response to a private email by Tatu Vanhanen in which he wrote that “differences in national IQs [which he and Lynn compiled] reflect the evolved human diversity. Nobody is responsible for those differences, not rich nor poor countries. Such differences are consequences of evolution through natural selection, which is not controlled by anybody. Our message is that we should learn to accept the evolved human diversity and its consequences in social, economic and political conditions. This means that human ability to equalize human conditions is quite limited. We should learn to accept our limitations and learn to live with them. They reflect the endless diversity of life.” Second, it is a response to Lynn's recent book *Race Differences in Intelligence: An Evolutionary Analysis*. Third, it is a short response to Kanazawa's article in which he concluded that the further away a nation is from sub-Saharan Africa, both latitudinally and longitudinally, the higher the average intelligence of the nation's population. One wonders why I respond to three authors in one essay review. The motive to do so is because all these three use the same “National IQ data” to make preposterous, unscientific, and discredited assumptions. All their writings, which I have been following for many years, are replete with fundamental analytical and theoretical flaws.

The work of Lynn and colleagues is part of the latest incarnation of biological determinism in which scores on so-called standardized tests are predetermined by genetic inheritance or evolution and are related to race. I can not see beyond it being social Darwinism and a eugenics movement masquerading as the state of the art supported by new discoveries in the field of genetics, statistics, and evolutionary psychology. None of the findings of either Richard Lynn or Satoshi Kanazawa are original or new. Lynn draws on hundreds of sources. However, most of these sources are either from his own previous work or colleagues writing from the same perspective. The common denominator in all these texts is the underlying fallacious assumption that the average differences in IQ among populations may reflect differences in their distribution of genes. In this review, I have tried to present a large number of current research findings that strongly demonstrate the scientific failure of the

concept of human race, that the concept of race has failed to gain acceptance, and that race is not a scientifically valid biological category. These studies support the view that genetic differences are not of importance in determining the social and cultural differences between different groups of homo sapiens, and that the social and cultural changes in different groups have, in the main, been independent of changes in inborn constitution. Vast social changes have occurred that were not in any way connected with changes in racial type.

Lynn argues that race differences in intelligence are real, substantially heritable, and *unalterable*. He attempts to give an account of the “general principles of the evolution of race differences in intelligence.” The crucial selection pressure responsible for the evolution of race differences in intelligence is identified, he argues, as the temperate and cold environments of the northern hemisphere, imposing greater cognitive demands for survival and acting as selection pressures for greater intelligence. (Lynn, 2006) There is no credible evidence for this statement. I maintain that the balance of evidence favours a predominantly cultural and environmental aetiology underlying *racial* differences in so-called intelligence and that the burden of proof is on researchers such as Lynn who argue for the predominance of genetic racial differences.

Lynn and Kanazawa have one thing in common: They have always mistaken statistical associations for evidence of causality and falsely concluded that intelligence as measured by IQ tests is the major source of differences in social, educational, and economic performance. For them, intelligence is a biometric trait and an evolutionary adaptation that is antecedent to such factors as income, health, crime level, fertility, success in life, and economic growth. In these authors’ work there is an absence of, or omission of, contending conceptualizations advanced by other prominent figures in the field. They both rely on a number of discredited texts, as I outlined earlier.

Finally, I summarize the main arguments from my side as follows:

- Analysis of genetic differences shows that ethnic groups do not differ substantially in the type of genes found, but that great differences among individuals exist within each ethnic group.
- People get their genes from their families, not from racial groups, and skin colour is skin deep and means little or nothing more.
- The degree of heritability of a characteristic tells us nothing about how much the environment can affect it. We also should not lose sight of the fact that, even if a trait is highly heritable, modifiability can also be great, as Professors Nisbett (2009) and Feuerstein (Kaniel et al., 1991; Kozulin, 1998a, b) argue elsewhere. There is concrete evidence that people are culturally malleable, their minds and tendencies shifting toward the culture in which they reside (Nisbett, 2009).
- Nearly all the evidence suggesting a genetic basis for the IQ difference is indirect. And the closest thing to direct evidence is twin inter-racial adoption studies from the 1970s and the studies have too many flaws.
- The IQ results are consistent with racially-based environmental effects in the order of group means. There is, in fact, no compelling evidence for any genetic contribution to the low black IQ scores.
- The validity of IQ test results depends to a large degree on how the tests are designed.
- IQ tests are essentially culture-bound social constructs which mainly test for performance in industrialized capitalist societies and tap into school-based skills.

- Researchers such as Lynn and Kanazawa have got their argument backwards as it makes far more sense to argue that the populations of rich countries do better on IQ tests because they have access to better nutrition and education.

I close with a quotation from Rose and Rose (2010) which, I think, summarises my argument quite well:

The natural sciences have taken and been given the cultural authority to tell us about the natural world, who we are and where we came from. It is not just a particular vision of natural selection that has become a universal acid, but the very explanatory remit of science itself. Those advancing such far-reaching claims would do well to recall Darwin's observation in *The Voyage of the Beagle*: "if the misery of our poor be caused not by the laws of nature, but by our institutions, great is our sin." In the context of the present crisis in global capitalism, this reflection is as salient as when it was written. (p. 23)

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