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Consistency of race differences in intelligence over millennia: A comment on Wicherts, Borsboom and Dolan

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ABSTRACT

Wicherts, Borsboom, and Dolan (2009) question whether contemporary national and racial IQs can be taken to represent the general intelligence of peoples in prehistoric eras, and hence whether theories based on this assumption have any plausibility. It is shown that contemporary differences in national and racial IQs can be identified at 10,000 years ago from differences in brain size, in making the Neolithic transition from hunter gathering to settled agriculture around 8000 years ago, in the development of early civilizations around 6000 years ago, and in scientific, mathematical, and technological advances during the last 2.5 thousand years. All of this evidence shows that race differences in intelligence have been present for at least the last 10,000 years.

1. Introduction

In this comment on the issues raised by Wicherts et al. (2009) I address the question of whether contemporary differences in national and racial IQs can be assumed to have been present many thousands of years ago. WBD are correct when they say that this is a problem: "contemporary national IQs cannot, without cogent arguments, be taken to represent the general intelligence of people in prehistoric eras".

The evolutionary theory of race differences in intelligence posits that these differences began to appear in peoples that migrated into the temperate and cold latitudes of North Africa and Eurasia around 60,000 years ago and evolved further in the last ice age of around 28–10,000 years ago. The theory posits that survival was more difficult in these temperate and cold environments. The environments were more cognitively demanding and exerted selection pressure for enhanced intelligence, which evolved in these peoples, as compared with those that remained in sub-Saharan Africa and in the Australian Aborigines who migrated into Australia without experiencing the cognitively demanding ice age environment (Lynn, 2006, p. 231). During the last ice age winter temperatures fell by about 5 °C in the northern hemisphere but not in the southern hemisphere (Foley, 1987; Roberts, 1989), so those in sub-Saharan Africa and in the Aborigines in Australia were not affected.

The theory that racial differences in intelligence appeared largely during the last ice age is supported by archaeological evidence showing that the peoples in colder environments invented more sophisticated tools. Thus, anthropologist Foley (1987, p. 269) writes "although there is a general and global technological development during the Pleistocene, it is in high latitudes that it is most marked; in parts of the tropics the artefacts remained simple" (the Pleistocene ended around 10,000 years ago). Stringer and McKie (1996) endorse this conclusion.

Further evidence that racial differences in intelligence were present at the end of the last ice age has been presented by Bailey and Geary (2009) who examined 175 skulls dated between 1.9 million years ago and 10,000 years ago and reported a correlation of −.41 between their size (cubic capacity) and temperature of their locations (greater size in lower temperature locations) and a correlation of −.61 between their size and latitude (greater cubic capacity in latitudes more distant from the equator). This study shows that larger brain size (conferring greater intelligence) had evolved before 10,000 years ago in the peoples inhabiting colder environments. Similar results have been reported by Ash and Gallup (2007) in an analysis of a sample of 109 fossilized hominid skulls. They found that approximately 22% of the variance in cranial capacity could be accounted for by variation in equatorial distance. They also found that cranial capacities were highly correlated with paleoclimatic changes in temperature, as indexed by oxygen isotope data and sea-surface temperature, and that 52% of the variance in the cranial capacity could be accounted for by temperature variation at 100 ka intervals. Temperature variation would have been more cognitively demanding because it would require adaptation to changing environments.

Shortly after the end of the last ice age, the races that had evolved higher intelligence made the Neolithic transition from hunter gathering to settled agriculture. This required higher intelligence because it was necessary to breed tame animals that could

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be herded, milked and slaughtered, and to breed plant foods with greater nutritional value. The transition was made completely only by the more intelligent races, i.e. the Europeans, South Asians and North Africans, East Asians, Southeast Asians, and Native Americans; to some extent by Pacific Islanders, who were handicapped by living in small and dispersed populations on small islands; minimally by the sub-Saharan Africans – "the sole animal that we know for sure was domesticated in Africa was the guinea fowl" (Diamond, 1997, p. 389); and not at all by the Bushmen and Australian Aborigines, who made virtually no progress in the transition from hunter-gatherers to settled agricultural societies.

The transition to agriculture made it possible to accumulate food surpluses to sustain towns and develop urban civilizations. Baker (1974) set out 21 criteria for a developed civilization, e.g. the invention of a written language, a written system of arithmetic, substantial buildings, water supply, sewage disposal, codified laws, etc. and showed that these were only developed by the East Asians, Europeans, South Asians and North Africans. The less intelligent Native Americans developed half of these criteria of civilization; and the remaining races, i.e. the sub-Saharan Africans, Bushmen and Australian Aborigines failed to develop any of them.

The race differences in intelligence expressed in the development of early civilizations continued to be manifested in the more developed civilizations of the last two and a half thousand years. Starting with the Greeks of the classical period, virtually all the advances that have been made in the last 2.5 thousand years in science, mathematics, technology, and the arts have been made by the East Asians and the Europeans, with some small contribution from the South Asians and North Africans. This has been documented in detail by Murray (2003).

The first attempt to quantify the magnitude of race differences in intelligence on the basis of historical evidence on the numbers of intellectually outstanding individuals they had produced per capita was made by Galton (1869). He constructed a scale of grades of intelligence in which one grade was equivalent to 10.425 IQ points on the IQ scale. He estimated that the sub-Saharan Africans were about two grades below the English, giving them an IQ of 79. This estimate is virtually identical to the figure proposed by Wicherts (2007) derived from intelligence tests. Galton estimated the intelligence of the Australian Aborigines at approximately three grades below that of the English, giving them an IQ at 68.8, a little higher than the figure of 62 derived from intelligence tests proposed by Lynn (2006).

WBD write that the evolutionary theory of race differences in intelligence assumes that "the Flynn Effect either does not exist or has been more or less invariant in magnitude across the globe during the twentieth century". Exponents of the theory certainly recognise the existence of the Flynn Effect and in fact one of us published a paper demonstrating it three years before Flynn noticed it (Lynn, 1981). Exponents of the theory do assume that it has been "more or less invariant in magnitude across the globe during the twentieth century" based for instance on the evidence showing that IQs in sub-Saharan Africans and Europeans have increased approximately in parallel since the 1930s. Thus, an IQ of 65 for sub-Saharan Africans was reported by Fick (1929), and 76 years later an IQ of 71 was obtained for a standardization sample by Knoetze, Bass, and Steele (2005) (Wicherts, Dolan, Carlson, and van der Maas (2009) give an IQ of 73 for this sample by counting only those aged up to 11 years and ignoring those above this age). These IQs are in relation to a British IQ of 100, so as British IQs have increased over this period, sub-Saharan African IQs have evidently increased at approximately the same rate.

While there has been general consistency in the race differences in intelligence and their manifestation in intellectual and cultural achievements during the last 80 or so years, and indeed over the last 10,000 years, the evolutionary theory does not demand that race differences in intelligence have been exactly the same at all times, but only that they should have been "more or less invariant in magnitude across the globe during the twentieth century" (WBD). The evolutionary theory posits that race differences have a heritability of approximately 50% (Lynn, 2006, p. 193; Rushton & Jensen, 2005). Hence environmental effects acting more strongly on one population than on another will affect the magnitude of the phenotypic differences. For instance, the rapid economic growth in Japan in the early post World War 2 decades brought substantial improvements in nutrition, which in turn produced an accelerated increase in intelligence relative to that in the United States, as shown in Lynn (1981). Similarly, if the Flynn Effect has ceased in the economically developed nations but continues in the economically developing nations, some reduction of the phenotypic differences in intelligence would be predicted, and the evolutionary theory would not be embarrassed if the IQ differences between the economically developed and economically developing world decreased in the future. The evolutionary theory does however predict that when different races occupy approximately similar environments, such as for instance in the United States, Britain and the Netherlands, the intelligence differences will remain. This prediction has been examined in twenty three societies worldwide in Lynn (2008) and has been confirmed in every case. If a multiracial society is found where these race differences in intelligence are absent, the evolutionary and genetic theory of these differences would be falsified. Those who maintain that there are no genetic differences in intelligence between the races are urged to attempt this task.

References

Ash, J., & Gallup, G. G. Jr., (2007). Paleoclimatic variation and brain expansion during human evolution. *Human Nature, 18*, 109–124.

Bailey, D. H., & Geary, D. C. (2009). Hominid brain evolution: Testing climatic, ecological, and social competition models. *Human Nature, 20*, 67–79.

Baker, J. R. (1974). *Race*. Oxford, UK: Oxford University Press.

Diamond, J. (1997). *Guns, germs and steel: The fates of human societies*. New York: W.W. Norton.

Fick, M. L. (1929). Intelligence test results of poor white, native (Zulu), coloured and Indian school children and the social and educational implications. *South African Journal of Science, 26*, 904–920.

Foley, R. (1987). *Another unique species*. New York: Wiley.

Galton, F. (1869). *Hereditary genius*. London: Macmillan.

Knoetze, J., Bass, N., & Steele, G. (2005). The Raven's colored progressive matrices: Pilot norms for Xhosa speaking primary school learners in part-urban Eastern Cape. *South African Journal of Psychology, 35*, 175–194.

Lynn, R. (1981). IQ in Japan and the United States shows a growing disparity. *Nature, 297*, 222–223.

Lynn, R. (2006). *Race differences in intelligence: An evolutionary analysis*. Augusta, GA: Washington Summit Publishers.

Lynn, R. (2008). *The global bell curve*. Augusta, GA: Washington Summit Publishers.

Murray, C. (2003). *Human accomplishment*. New York: Harper Collins.

Roberts, N. (1989). Pleistocene environments in time and space. In R. Foley (Ed.), *Hominid evolution and community ecology: Prehistoric human adaptation in biological perspective*. London: Academic Press.

Rushton, J. P., & Jensen, A. R. (2005). Thirty years of research on group differences in cognitive ability. *Psychology, Public Policy, and the Law, 11*, 235–294.

Stringer, C., & McKie, R. (1996). *African exodus: The origins of modern humanity*. New York: Henry Holt.

Wicherts, J. M. (2007). *Group differences in intelligence test performance*. Amsterdam: University of Amsterdam.

Wicherts, J. M., Borsboom, D., & Dolan, C. (2009). Why national IQs do not support evolutionary theories of intelligence. *Personality and Individual Differences*.

Wicherts, J. M., Dolan, C., Carlson, J. S., & van der Maas, H. L. (2009). Raven's test performance of sub-Saharan Africans: Average performance, psychometric properties, and the Flynn effect (Unpublished).