

- Lynn, R. (1991). Race differences in intelligence: A global perspective. *Mankind Quarterly*, 31, 255–296.
- Lynn, R., & Vanhanen, T. (2002). *IQ and the wealth of nations*. Westport, CT: Praeger Publishers/Greenwood Publishing Group, Inc.
- Neisser, U. (Ed.). (1998). *The rising curve* (pp. 95–112) (pp. 95–112). Washington, DC: American Psychological Association.
- Nosek, B. A., Banaji, M., & Greenwald, A. G. (2002). Harvesting implicit group attitudes and beliefs from a demonstration web site. *Group Dynamics*, 6(1), 101–115.
- Rushton, J. P. (1995). *Race, evolution, and man*. Princeton: Princeton University Press.
- Sternberg, R. J. (2004). Culture and intelligence. *American Psychologist*, 59(5), 325–338.
- Sternberg, R. J., Grigorenko, E. L., & Kidd, K. K. (2005). Intelligence, race, and genetics. *American Psychologist*, 60(1), 46–59.
- Sternberg, R. J., & Kaufman, J. C. (1998). Human abilities. *Annual Review of Psychology*, 49, 479–502.
- Sternberg, R. J., Nokes, K., Geissler, P. W., Prince, R., Okatcha, F., Bundy, D. A., et al. (2001). The relationship between academic and practical intelligence: A case study in Kenya. *Intelligence*, 29, 401–418.
- Van de Vijver, F., & Leung, K. (1997). Methods and data analysis of comparative research. In John W. Berry, Ype H. Poortinga, & Janak Pandey (Eds.), *Handbook of cross-cultural psychology, Vol. 1: Theory and method (2nd ed.)* (pp. 257–300). Needham Heights, MA: Allyn & Bacon.

Earl Hunt

University of Washington, United States
E-mail address: ehunt@u.washington.edu.

Corresponding author.

Robert J. Sternberg

Yale University, United States
E-mail address: robert.sternberg@yale.edu.

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The Jensen and the Hunt and Sternberg comments: From penetrating to absurd

Abstract

We praised the comments of Jensen and regard most of the contentions of Hunt and Sternberg as absurd. It is ridiculous to question the validity of the skin color map and its application since meaningful group differences and meaningful correlations between temperature and skin color were found. It was inappropriate for Hunt and Sternberg to attribute prejudices and erroneous preconceptions to our raters who were assigned a task that inherently permits

very minimal subjective interpretation. The suggestion of Hunt and Sternberg that higher intelligence evolves in equatorial people is incongruent with the correlation of 0.62 between cranial capacity and distance from the equator reported by Beals et al. Hunt and Sternberg failed to provide a balanced perspective in their critique of the Lynn and Vanhanen international presentation of IQs.

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1. Comments on the Jensen commentary

Jensen provided an outstanding commentary. He politely and articulately understated his case when he said “The collection of mean IQs in the various countries (whether *N*-weighted or not) almost certainly fall short of the degree of reliability and validity attainable with psychometric tests administered under laboratory conditions.” He went on to say that the data have sufficient overall precision for “ecological correlations” that are widely accepted in epidemiological medical research. He maintained that the aggregation of test scores “average out” the unique and irrelevant sources of variance among individuals.

Jensen pointed out that our correlations between skin color and IQ on the international level are consistent with his review of 18 published studies with African-Americans that yielded an average correlation of about 0.20. We recognize that a correlation of 0.20 accounts for only 4% of the variance. It is, however, understandable that the correlation is much lower than in our international study because the skin color variance is obviously smaller.

Jensen suggested that we may have been too conservative in dismissing the possibility of cause and effect relationship between skin color and IQ because of the genetic phenomenon of pleiotropy in which a single gene has more than one phenotypically quite different effect. Jensen brilliantly suggested research using sibling pairs that tests the hypothesis that the lighter skinned sibling tends to have higher intelligence. We believe that such a study would be feasible. This could be carried out by finding a school that has both student pictures and student IQs or achievement or aptitude tests that correlate rather highly with IQ such as the SAT. Another research idea we propose is that of correlating skin color with head size in fraternal twins. The *N* would have to be very large for adequate power because the correlation of IQ with external head measurements is lower than with MRI determined brain size.

2. Comments on the Hunt and Sternberg commentary

In contrast to Rushton and Lynn who maintain that higher intelligence evolves in colder climates, Hunt and Sternberg suggested that the challenge of fending off a myriad of parasitic diseases should make equatorial people more intelligent. Their idea is an intriguing one. The research evidence, however, does not support their contention. In our article under discussion temperature correlates negatively and not positively with IQ. An even more telling blow to the Hunt and Sternberg argument is the correlation of 0.62 between cranial capacity and distance from the equator reported by Beals et al.

Hunt and Sternberg placed much more emphasis on the skin color correlations than the temperature correlations. This obscures the fact that the Templer and Arikawa study was primarily designed to test the contention of Rushton and Lynn that people in colder climates tend to have higher intelligence. Skin color and IQ were the two principal variables in the design of the study. The negative correlations between temperature and IQ strongly support the position of Rushton and Lynn. Skin color was conceptualized as a climatic variable, a multigenerational reflection of the climate one's ancestors have lived in for thousands of years. The very high correlation of IQ and skin color provides "frosting on the cake."

Hunt and Sternberg acknowledged that the high skin color correlations between ratings of the three graduate students demonstrate reliability. They asserted, however, that the raters "may share the same implicit theories, prejudices, erroneous perceptions, or whatever. For example the fact that the three judges from the Salem witch trials may have shared the same views as to which of the accused were witches did not make the accused witches." We regard this argument as absurd. One of the raters never met or talked to the other two raters and is doing her graduate work at a different school over a thousand miles away. More importantly, the nature of the task contains an extremely small subjective element. The raters used only two things—the skin color map of the world that does not have delineated national boundaries and maps of their choice that do show national boundaries. The majority of the countries were covered by a shading representing only one skin color. In retrospect, we really did not have to have the raters consider those countries. No element of judgement was involved with these countries. The concern of Hunt and Sternberg about India has some justification. In fact, we had the same concern because

it has more skin colors than any other country. Because of this concern we computed the correlation between skin color and IQ without India. The correlations for the 128 and 129 countries were remarkably similar and both round to -0.92 . This was reported to the Editor in our extensive communication.

We dismiss the Hunt and Sternberg criticism of the raters not having visited the countries and having no relevant information about these countries (even if it is correct) as irrelevant. In fact, having visited a country may even produce more biases than it corrects. If a visitor from another continent should go to Vancouver in January he or she may infer that Canada has mild winters. One of the authors, Arikawa, was surprised to find out that her native country of Japan had a mean IQ of only 105 after having lived in the country for a quarter of a century.

Students in undergraduate test and measurements classes are taught that correlations and group differences support the validity of measurement instruments. Our negative correlations between temperature and IQ support the validity of the skin color map. In regard to group differences, there is no skin color shading overlap between the European countries and the Black African countries. Do Hunt and Sternberg doubt that temperature and skin color are correlated? Do they doubt that Black Africans tend to be darker than Europeans?

The skin color map is consistent with common knowledge. Southern Europeans tend to be darker than northern Europeans. Africans below the Sahara desert tend to be darker than Africans (e.g. Arabs and Berbers) north of the Sahara desert. A reasonable assessment is that the skin color map may have limitations. It would be preposterous to say that it has little or no validity.

Hunt and Sternberg argued that one reason our skin color–temperature correlations are spurious is that non-Western people were tested with Western-developed measures of intelligence. Their argument should not be categorically rejected. In fact, we said "Although both of these instruments would appear to be void of educational and specific culture content, it cannot be assumed that they are equally effective in measuring intelligence around the world." Relevant to this issue is a Templer and Arikawa study now in its final stages. We computed the correlations between IQ and skin color in three continents. The correlations are -0.86 for Africa, -0.55 for Asia, and -0.63 for Europe. It would be difficult to argue that the Ravens Progressive Matrices and the Cattell Culture Fair Test are inappropriate for Europeans.

The present authors agree with Jensen and agree with Hunt and Sternberg that the methodology of the Lynn and Vanhanen international aggregation of IQs is far from perfect. The standardizations of the Wechsler tests of intelligence are also not perfect. There is, however, no other international aggregation of IQs. It is most unlikely that the authors of the individual IQ studies consistently tested below national average participants in the warmer countries and consistently tested above national average participants in the colder countries. In general, imperfections in measurement instruments are more likely to attenuate than inflate correlations. A correlation of 0.92 between two worthless instruments is not possible. On the other hand, we urge that this correlation not be viewed as immutable.

Hunt and Sternberg failed to provide a balanced perspective in discussing the methodology limitations of Lynn and Vanhanen. They criticized these authors for averaging the means of IQs that have Ns of different sizes. This criticism would possibly be appropriate if Site A in a given country had a population of 1000 and 100 were tested and Site B had a population of 500 and 50 were tested. If, however, the selection of participants approached being haphazard as Hunt and Sternberg implied, it would not be mathematically justifiable to apply different weights to different sites. Furthermore, Lynn and Vanhanen reported high reliability for their national IQs using the 45 countries that have two measures of IQ and the 15 that have three or more (in which case the two extreme mean IQs were employed). The correlation between the two IQs in the 60 countries was 0.94. In regard to the use of IQ tests in non-Western populations, Lynn and Vanhanen pointed out that people from a variety of cultures, including Ugandans and Black South Africans, have the same pattern

of intercorrelations and an identifiable *g* factor on ability tests. Lynn and Vanhanen provided evidence that reaction time, which correlates positively and substantially with IQ, has the same rank order as IQ in five countries of the world. Hong Kong, Japan, Britain, Ireland and South Africa rank in descending order in both IQ and six different reaction time measures. The correlations are 0.94, 0.89, 0.96, 0.83, 0.73 and 0.85. Lynn and Vanhanen reminded their readers that East Asians tend to score higher on Western developed IQ tests than do Europeans and Americans.

In regard to Hunt and Sternberg saying that the publication of our article is unfortunate, we feel the need to point out that the Editor did not quickly or impulsively accept it. It was refereed by three psychologists who are recognized as leading authorities in the world in the area of intelligence. The Editor and the authors engaged in extensive communications over a period of months. Further input of the referees was obtained. Major concessions were made to the extremely critical reviewer. Three revisions were required by the Editor, and the Editor finally accepted with the understanding that comments to our article will also be published.

Donald I. Templer
Alliant International University,
United States
E-mail address: donaldtempler@sbcglobal.net.

Hiroko Arikawa
Springfield, MO,
United States