WHY ARE RACIAL DIFFERENCES IN INTELLIGENCE NOT LARGER?

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The gene of the ability to taste phenylthiocarbamide (PTC), a psychophysiological trait, has (see Weiss, Lehrl, and Frank 1986, p. 142) a frequency of about 0.50 among Caucasoids, a frequency of about 0.38 among Japanese, of 0.13 among Navajo-Indians, and of 0.70 among Australian aborigines. The most impressive fact of Lynn's review on race and population differences in intelligence is their smallness. Differences between social strata within one population are larger than between races. We all know that an occupational group with higher education, whether black, white or yellow, has a mean IQ of about 125, the social stratum of unskilled workers a mean of about 90. In view of such social differences it will be always controversial, to draw from a lower mean of the Blacks in the United States the conclusion that Negroids are generally less intelligent. At best, such an inference should be based on representative samples of Caucasoids compared with pure Negroids from Africa where all social ranks are filled by one and the same race. Lynn's review showing a 30 IQ difference between Caucasoids and pure African Negroids is more persuasive evidence that this difference has a genetic basis than has hitherto been available.

Despite many thousand years of relatively independent evolution, Mongoloids in East Asia and Caucasoids in Europe (and in the New World) appear to have very similar gene frequencies of general intelligence. The similarity holds whether you are an adherent of a major gene locus (Frank, 1985) or of a polygenic basis of intelligence. However, if the polygenic hypothesis is correct then the IQ-correlation of about .50 between spouses would lead to a very rigid caste-like social stratification, far more effective than it ever has been in India. On the alternative theory, a major gene locus for intelligence with an allele frequency of about 0.20 (Weiss, Lehrl and Frank, 1986) for a gene Ml responsible in the homozygous state for an IQ of 130 is in accordance with the facts of social mobility within developed societies, where two generations are sufficient to climb or fall the social ladder from top to bottom, a fact which could have Mendelian segregation at such a locus as a background. In

order to get the percentage of the homozygous M1M1 in the total population we have to square the gene frequency 0.20 and get 4% (and 5% with the correction for the increase of homozygous individuals by assortative marriage).

The crucial question is, what are the evolutionary forces which have stabilized and are still stabilizing such a frequency of 0.20 of high IQ individuals and a general population mean of about the same level in Mongoloid and Caucasoids, with about 68% M2M2 individuals (mean IQ 94) and about 27% heterozygous M1M2 (mean IQ 112).

In developed societies high intelligence of a person is of such an advantage, that one wonders why the major gene (or allele) M2 responsible for lower intelligence has survived with a frequency of about 0.80. A small correlation between IQ and reproductive success, extending over ten generations (see Weiss 1990), could easily result in a dramatic change of gene frequencies. In order to explain the similarity between Japan and England we need not go back as far as the Würm glaciation, but have to look for the developed societies during the last maybe 3,000 years, and during the centuries in which the New World was settled.

The explanation I propose for the persistence of the low IQ allele is that a large number of people of low intelligence is necessary for the preservation of social stability. A stable social hierarchy needs a small number of high IQ individuals at the top, a greater number of individuals of average intelligence for the middle positions, and a large number of low IQ individuals to perform modest routine work at the bottom. A hierarchical society can only tolerate a very small percentage of high IQ individuals in relatively humble social positions, because such individuals represent always, in view of the limited number of leading positions, a potential threat to the ruling élite. In economically dynamic societies there must always be periodic turbulence, and the antagonism between ruling and powerless high IQ-individuals, i.e. the struggle for leadership of the majority (see Weiss 1991), is the most important destabilizing factor, not the direct challenge to the ruling élite by the low IQ-majority itself. Even egalitarian revolutions are led by an élite who in turn create a new one. All societies have to have a hierarchy with a relatively low fixed ratio of leading to non-leading positions.

To explain the major intelligence differences between the Negroids on the one hand and the Caucasoids on the other, I propose that during the last Ice Age there arose somewhere in Eurasia (compare, for example, Auel 1980) the superior IQ-130-mutant (processing at double mental speed and capable of 70 bit short-term-memory storage capacity per M1-allele, i.e. 140 bit in the homozygous M1M1-state). This mutant must

have conferred a selection advantage and spread. It appears that this mutation was never introduced into the Australian aborigines and so it probably occurred sometime in the last 40,000 years after the aborigines had become isolated in Australia. A pack of mammoth hunters of about a dozen men with an IQ of 94 and half a dozen heterozygotes with an IQ of 112, led by an alpha male with an IQ of 130 became an optimal foraging unit. Such a one-level hierarchy, based on a division of labor correlated with intelligence, was the prerequisite for the rise of multi-level societies. However, this rise was not accompanied by a fundamental change of the stabilizing forces of the genetic polymorphism itself. It seems that multi-level hierarchies in Europe and East Asia were very reluctant to create additional niches for gifted surplus offspring where survival could be correlated with reproductive success above average. In the future it will be an open question whether the advent of electronics will create more such niches, and in this case societies, which have developed social mechanisms to tolerate and to absorb a growing percentage of humble high-IQ individuals with families could have an advantage. This may already have occurred in Japan.

The difference between IQ 100 and a mean IQ of 83 among Australian Aborigines suggests a difference of a size, comparable to the difference of body height between a Spaniard and a Filipino. However, this is an illusion caused by IQ normalization. Real test scores of shortterm memory capacity, as the product of mental speed (reaction time is only one possible operationalization) and memory span, both underlying general intelligence, range from 70 bits for IQ 94 up to 140 bits for IQ 130 (Frank, 1985) and show a skewed distribution. In other words, an IQ difference of 20 or 40 points does not mean a difference of 20 or 40%, but a difference of such an absolute order of size (compare also Lehrl and Fischer, 1990), if multiplied by the benefits of social hierarchy, that in the long run can account for the difference between a computer and a tool of an Australian aborigine. In populations with a mean of 90 a decrease of IQ-related achievements of about 10% seems to be suggested; in reality in such populations the gene frequency of M1 is zero and the achievements of such populations are accordingly meager.

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OVERCOMING THE LIMITATIONS OF IQ

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Lynn presents a thorough survey on empirical findings about the IQ of races and draws important conclusions on the races' contributions to civilization and the evolution of Homo sapiens. The crucial point is the biological endowment of races. In this respect the question arises whether his assumptions about biological aspects of intelligence have exhausted all possibilities discussed at present. We will concentrate on:

1) the concept of biological intelligence,
2) its measurement on ratio scale level (prerequisites are a unit of measurement and an absolute zero point), and
3) the transformation of the reported IQ-points into the capacity of short-term memory storage which is measured by bits. This is a scientifically very promising measure of mental efficiency.

Biological Intelligence

Eysenck has suggested a guiding model which helps to determine the biological core of general mental efficiency. He distinguishes between biological, psychometric, and social or practical intelligence. For the latter we prefer the term socioecological intelligence. According to Eysenck, biological intelligence is the structure of the nervous system which enables us to behave intelligently – to learn, memorize, solve problems, etc. Psychometric intelligence is measured by traditional IQ tests. Although they usually aim to measure biological intelligence, they fail to do so because performance is – at least to some extent – influenced by social factors such as education, culture, and parental upbringing. He estimates that the percentage of genetic determination of IQ measurement amounts to about 70%.

Socioecological intelligence is the application of IQ in practical situations of everyday life. It is often considered as equivalent with successful adaptation. Confounding variables are health, drinking habits, personality, socioeconomic status, etc. As has been reported in a great number of current medical communications there are various possibilities to increase the actual mental efficiency in cases where the biological intelli-