

## **Are modern humans (*Homo sapiens*) still evolving?**

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### ***ABSTRACT***

*Keeping in view the basic meaning of organic evolution, that evolution is a change in the genetic make-up of a population, human populations have been evolving but not speciating, because of their restlessly migratory habit, and the human technology, which helps them in facing different environmental conditions without evolving any bodily adaptations.*

**Keywords.** *Intraspecific Evolution, Speciation, Human Races, Allopatry, Parapatry.*

In a nutshell evolution is a change/changes in the genetic make-up of a population, which change/changes may or may not lead to speciation or taxonomic diversity, i.e., it may be intraspecific. As inferred from advanced genomic studies on humans, by Pritchard (2010) and his coworkers, and also by others, that genetic changes in human populations, through rapid natural selection, have repeatedly occurred. One example is of the Tibetan population, living 14000 above the sea level, in conditions of low oxygen level in the atmosphere. They have a mutant gene, which controls red blood cells production. Such a gene is rare in other populations.

Another instance of an intraspecific evolutionary change, cited by Pritchard (*loc. cit.*): In populations, which have taken to extensive dairy farming in Europe. Middle East, and eastern Africa, the gene for production of the enzyme lactase, which helps digestion of milk sugar (lactose), is specially prevalent.

Researchers have found that people living at higher latitudes, have at least six genes, in mutant forms, connected with hair, skin and eye colour, producing low pigment

concentrations, so that enough UV could penetrate the body cover, enough for synthesis of the vitamin D. Hence people at those altitudes are fair in complexion.

Verma and Saxena (2000) have referred to another such example: “In 1960s the TIME magazine conducted a survey of I.Q. among children born in a US university campus, and noted that there was literally a burst of I.Q. Several children were having I.Q. close to that of Newton. But this did not result in formation of a superintelligent human species, as the population in the university campus was not isolated from the rest of the US population.”

### **WHY INTRASPECIFIC EVOLUTIONARY CHANGES AMONG HUMANS DO NOT LEAD TO SPECIATION?**

Mainly there are two factors responsible for preventing speciation among modern humans, as pointed out by Verma (2009); they are:

1. Man's technology,
2. Man's restlessly migratory habit.

During the past 1,50,000 years history of *Homo sapiens*, no further speciation has occurred, because his technology permits him to invade different environments without evolution of any bodily adaptation.

Humans have been restlessly migratory. After their origin in Africa, they migrated out of Africa, about 80,000 years back to the Middle East, and from there to the rest of the world. Thousands of years ago, when modern means of transport were not available, Buddhism, after its origin in India, could reach China and Japan. Similarly Islam, after its foundation in the Middle East, extended its range to the South-East Asia. Christianity, after having its origin in the Middle East, swept through Europe, and even reached the New World.

Because of frequent and extensive migrations, humans of different geographical populations, have been frequently interbreeding, or hybridizing (Verma, 2012). As Bates (1963) has said, in Mexico about 60% of population has resulted from marriages between Europeans and Red Indians, and in Urals most of the population has resulted from hybridization between Europeans and Mongoloids. More such instances may be cited.

Because of frequent gene flow between different geographic groups, there has been no reproductive isolation between them; hence the modern humans have not speciated further, and have continued as one species.

### **WHAT ARE HUMAN RACES?**

We often talk of human races, and have racial prejudices. But ‘race’ is not a taxonomically recognized group or taxon. Some authors have used the term ‘race’ in place of ‘subspecies’. As per Mayr and Ashlock (1991) geographical subspecies differ in “sufficient diagnostic morphological characters”, and their breeding ranges are not overlapping. Human geographic groups cannot be regarded as subspecies, as they do not show consistent morphological differences among them, and their breeding areas broadly overlap. Oliviera and Ferreira (2004) have correctly said that the concept of human races is “imprecise” and “subjective.” They have also pointed out that through “extensive genetic studies of several human populations from different continents ... it was verified that human diversity was higher inside the “racial” or geographic groups than among them”.

### **CAN DIFFERENT GEOGRAPHIC GROUPS BE TAKEN AS ALLOPATRIC?**

The human geographic groups/populations may not be taken as allopatric, as there are broad clines (i.e. areas of gradually changing genetic make-up from one population to the other) between them. Smith (1965) introduced a new term, ‘parapatry’, which refers to populations in contact. Should we take human geographic groups as parapatric? But there are broad clines between them, and taking them parapatric does not seem appropriate. Verma and Saxena (2005) have opined that they may be taken as parapatric till a better suited term has been introduced by human biologists.

### **CONCLUDING REMARK**

From the above discussion it may be inferred that modern humans are evolving, but not speciating.

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