

PART 2

A Reference Model: Absence of Evolutionary Factors

Population genetics is the study of changes in the genetic composition of populations, from generation to generation. Through the gametes which they produce, and which go to form the members of the next generation, individuals can affect the future genetic composition of the population of which they are members. Although in human populations an individual can influence the population's conditions of existence (for example its social structure, or its intellectual level), he can only influence the genetic future of the population by means of the gametes he transmits.

Many factors can affect this transmission, and change the genetic structure of a population. Such changes constitute the evolution of the population. Before we study the effects of the various factors that can change the genetic composition of a population, it is, however, useful to consider the situation when no evolutionary force is acting, other than any forces for change that are imposed by the hereditary mechanism itself. This is obviously never the case for any real population. However, the concept is useful as a model which we can use for reference when we come to study the effects of the factors which we have assumed to be absent in such a population: mutation, selection, migration, non-random mating, overlapping generations and stochastic factors due to limited population size.