

# Prep 7

Science, Biology



Prep 7 PREP 7 There are various ways in which similar genotypes can give rise to different phenotypes as discussed. One of the ways is mutation that gives rise to phenotypes. The other way is the genotype-phenotype mapping that is caused by environmental factors (Dawkins, 1999).

Quantitative traits are phenotypes that vary in degree and can be to polygenic effects such as their environment. Their expression is more complicated than traits that are controlled by a single locus because they usually give and take between environmental impacts and genes. They create the illusion of blending inheritance by mapping regions of the genome that contain genes (Dawkins, 1999).

The environment has a strong influence when it comes to gene expression. For example, the mixture of genes he inherits and the environment, he interacts with determines the personality of an individual. Various environmental cues can alter the gene expression. They are the extracellular and intracellular concentrations of different ions (Dawkins, 1999).

Reaction norms could be used to understand phenotype plasticity in the below manner. Phenotype plasticity shows the degree to which the phenotype of an organism is. The response patterns display the relationship between the genotype and phenotype (Dawkins, 1999).

The variability could be structural variations and copy number variations. The difference between broad sense and narrow sense heritability is that the general sense shows the genetic contributions to the phenotype variance of a population and the strict sense does not reflect genetic contributions. Heritability is measured by coming up with the relative contributions of non-genetic and genetic differences to the total phenotypic variation in a

population (Dawkins, 1999). The narrow sense heritability and the strength of selection work together in a manner that their response is since they are necessary for selecting (Dawkins, 1999

#### References

Dawkins, R. (1999). *The extended phenotype: The long reach of the gene*. Oxford [u. a.: Oxford Univ. Press.