Quantitative characters I: polygenes and environment

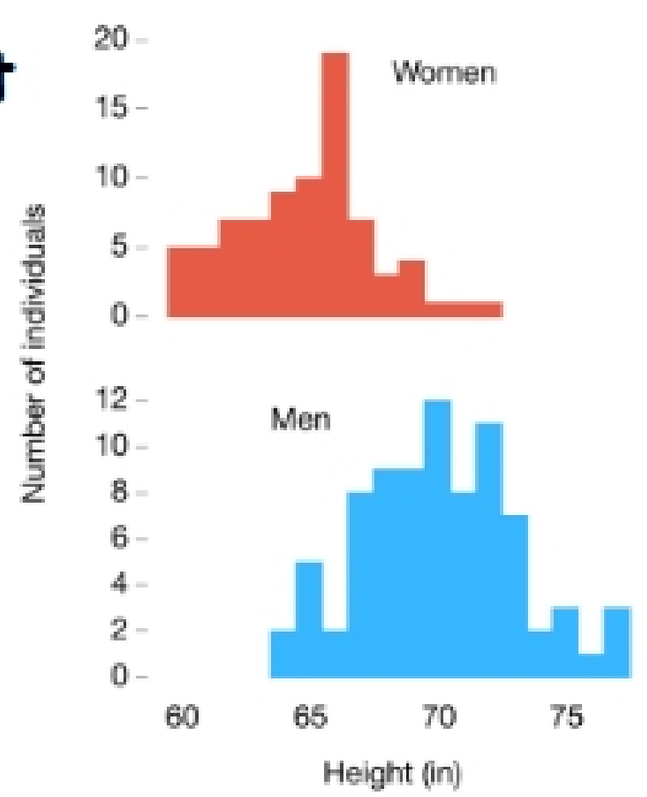
Most ecologically important quantitative traits (QTs) *vary*.

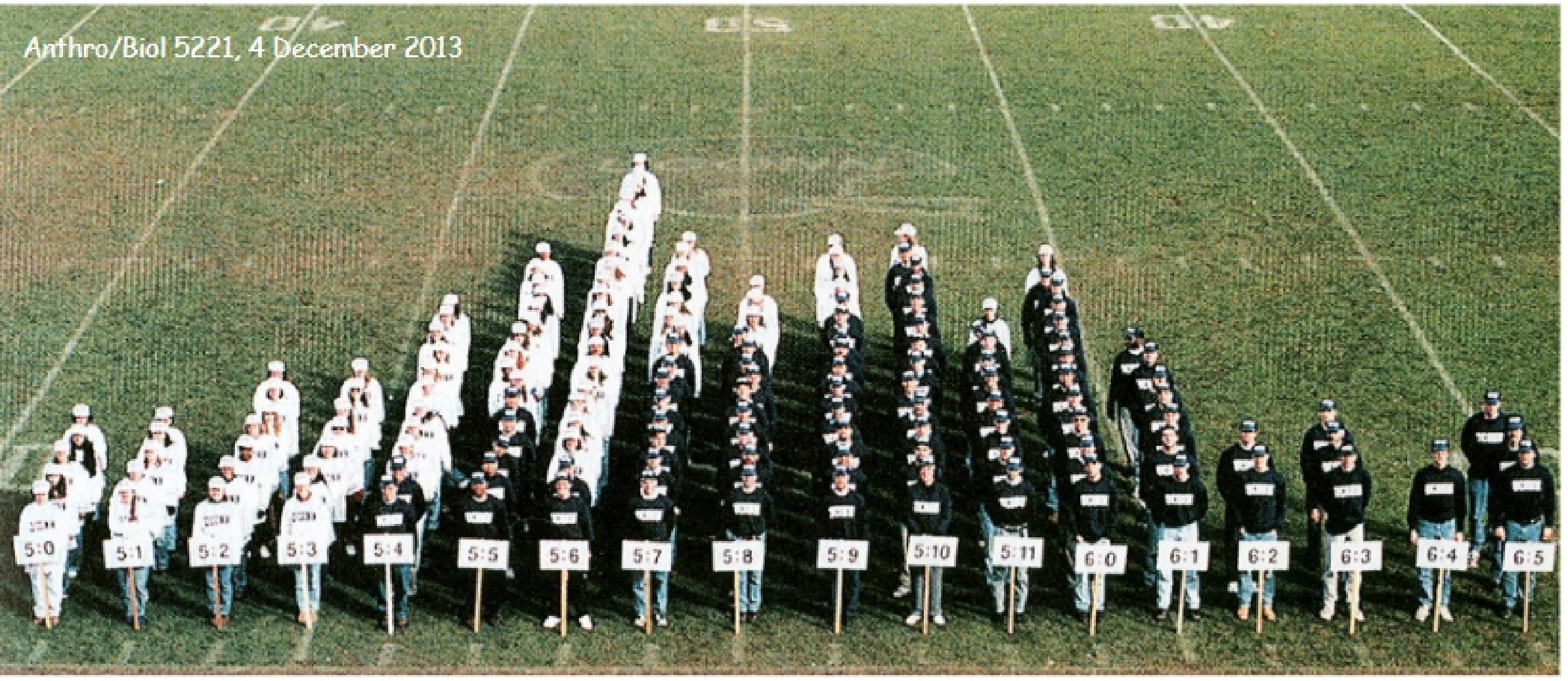
Distributions are often *unimodal* and approximately *normal*.

Offspring and parents are *correlated*.

What's the explanation?

Independent contributions by genotypes at *many loci*, and by *random environmental influences*.





Gillespie's colorless but personal example, with correlation

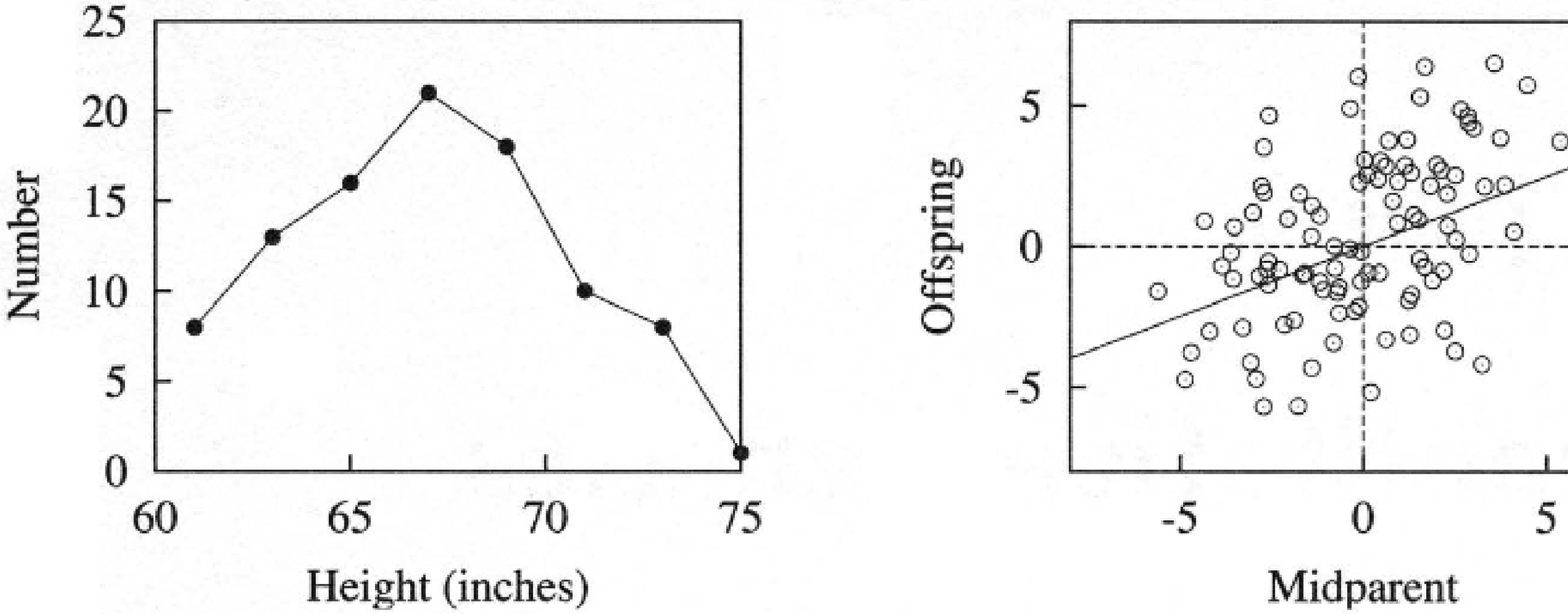


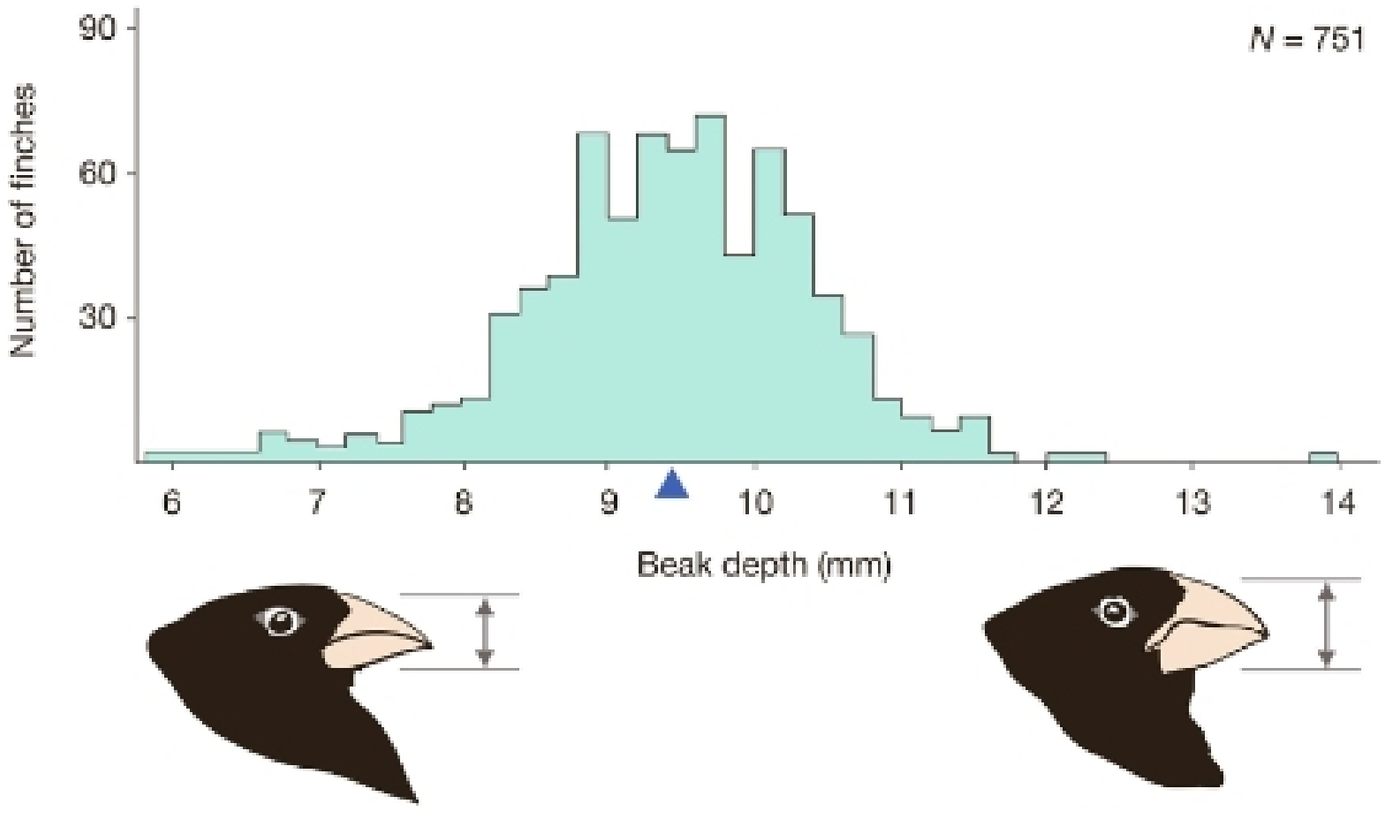
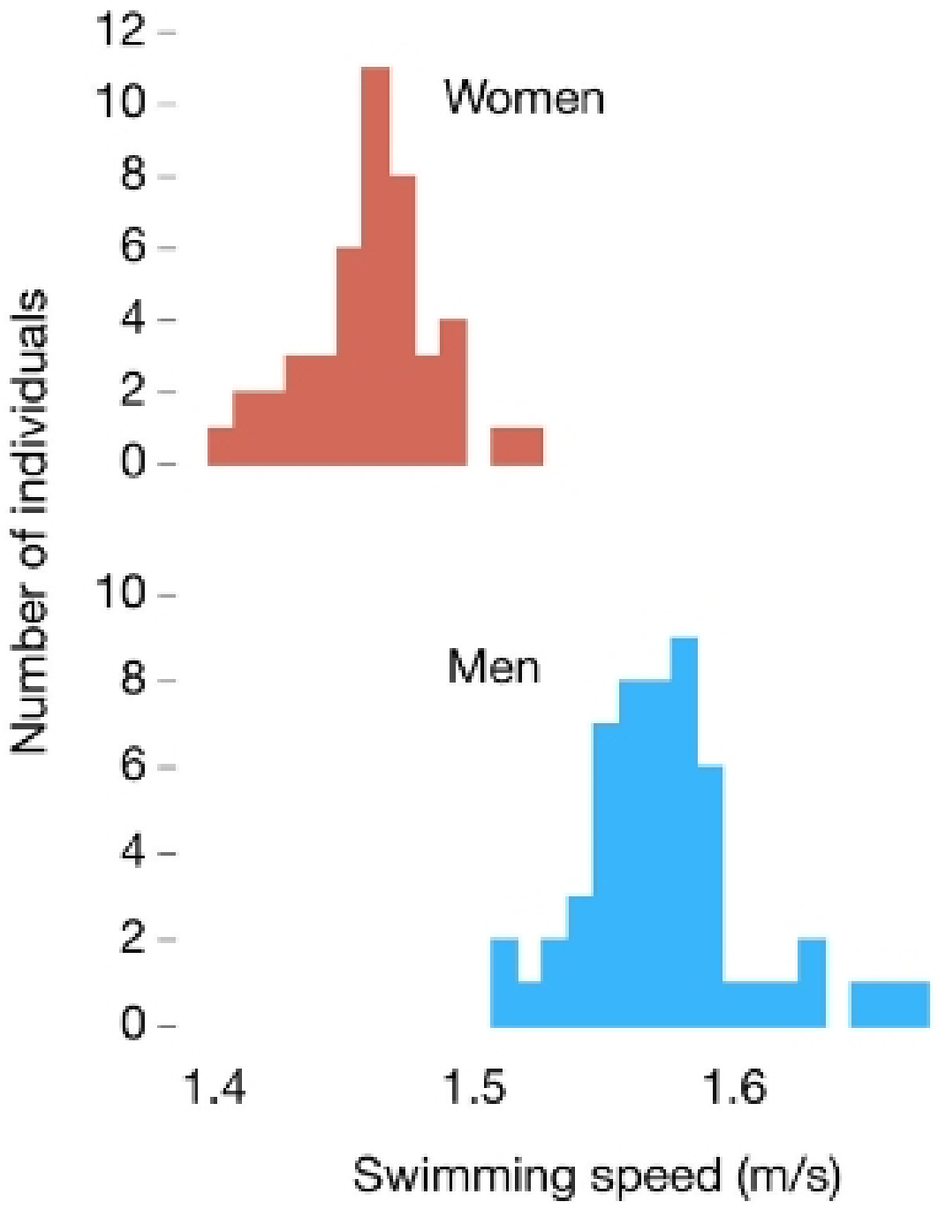
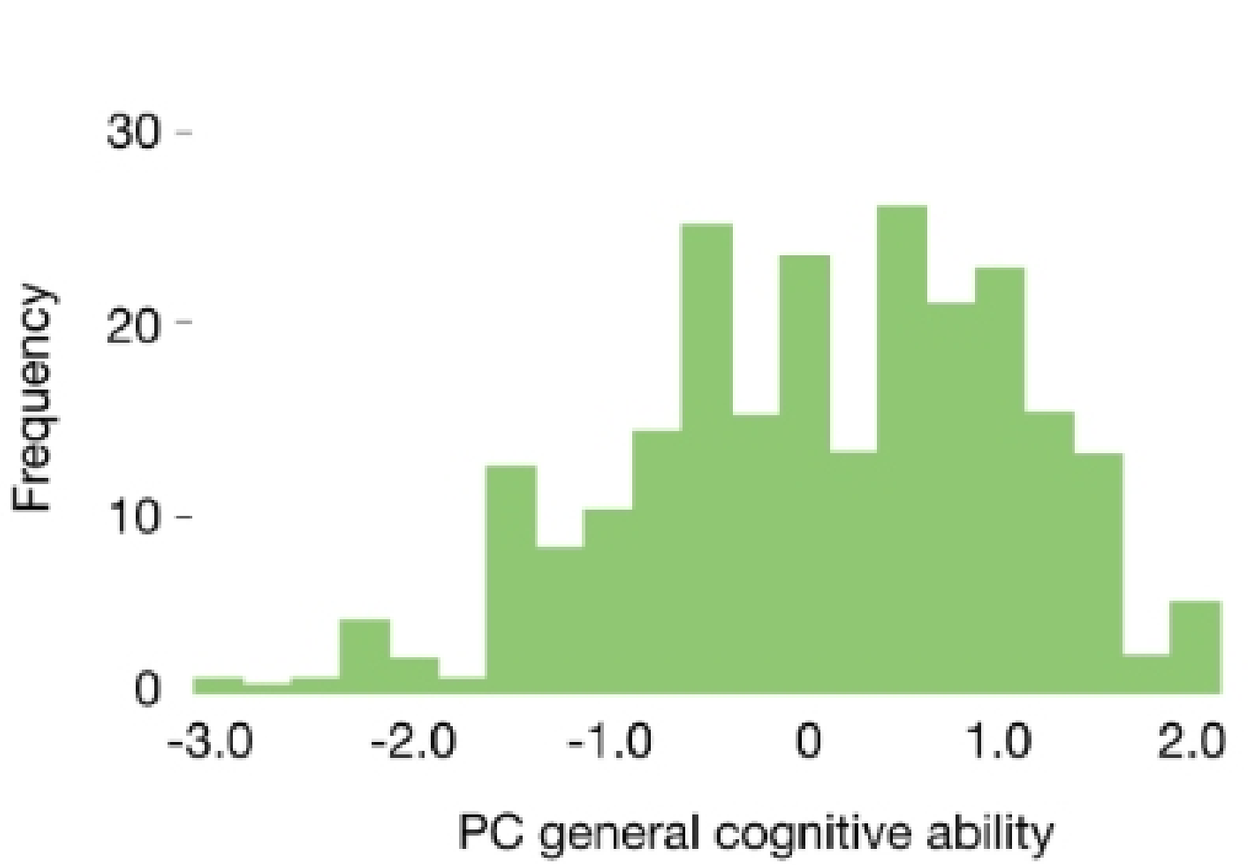
Figure 6.1: The left-hand figure is a histogram of the number of students of a particular height in an evolution class at UC Davis. The right-hand figure graphs the deviation of a student's height from the population mean against the deviation of the student's parents' average height from the population mean. The correlation coefficient is 0.476.

A QT is anything you can measure on a scale (with units of some kind).

Some examples:

Morphology (size, shape)

Physiology (pressure, temp., rate)

Performance (speed, puzzle-solving)

Fitness! (seeds, surviving offspring)