Viability selection

1. Viability selection assumes the only effect of selection is on survival (not reproduction) of different genotypes

2. Fitness is measured relative to the standard genotype, which is (usually) assigned a fitness of one

3. In general, the fitness of any other genotype is $w = 1-s$, where s is the difference in fitness from the standard genotype

4. Scaling of genotype fitnesses relative to a standard fitness of 1 is arbitrary; different scalings have no effect on the dynamics of selection

5. What matters is the *relative* fitness of different genotypes; so long as the ratios of the fitnesses are unaltered, their absolute values don't matter

6. This fact allows incorporation of other aspects of fitness other than differences in viability (in particular, differences in reproduction).

Absolute versus relative fitness

Types of Selection, Cont'd

Frequency Dependent Selection

Negative FDS, Example #1: Color polymorphism in Guppies

Negative FDS, Example #2: The sex ratio

Most species that have two separate sexes have nearly equal numbers of males and females. Why?

Types of Selection Summary

Do Heterozygote Advantage (Overdominance) and Negative FDS account for genetic polymorphism in populations?