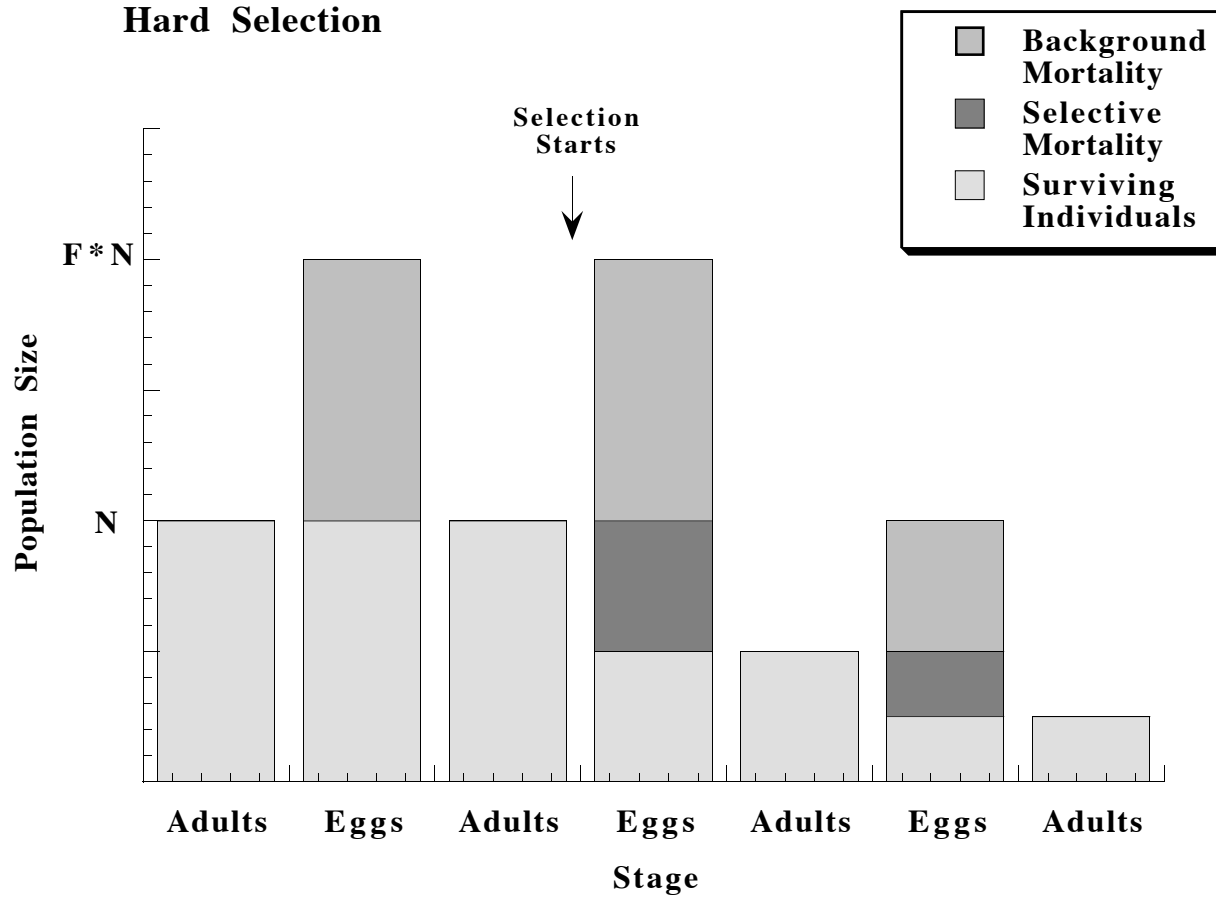
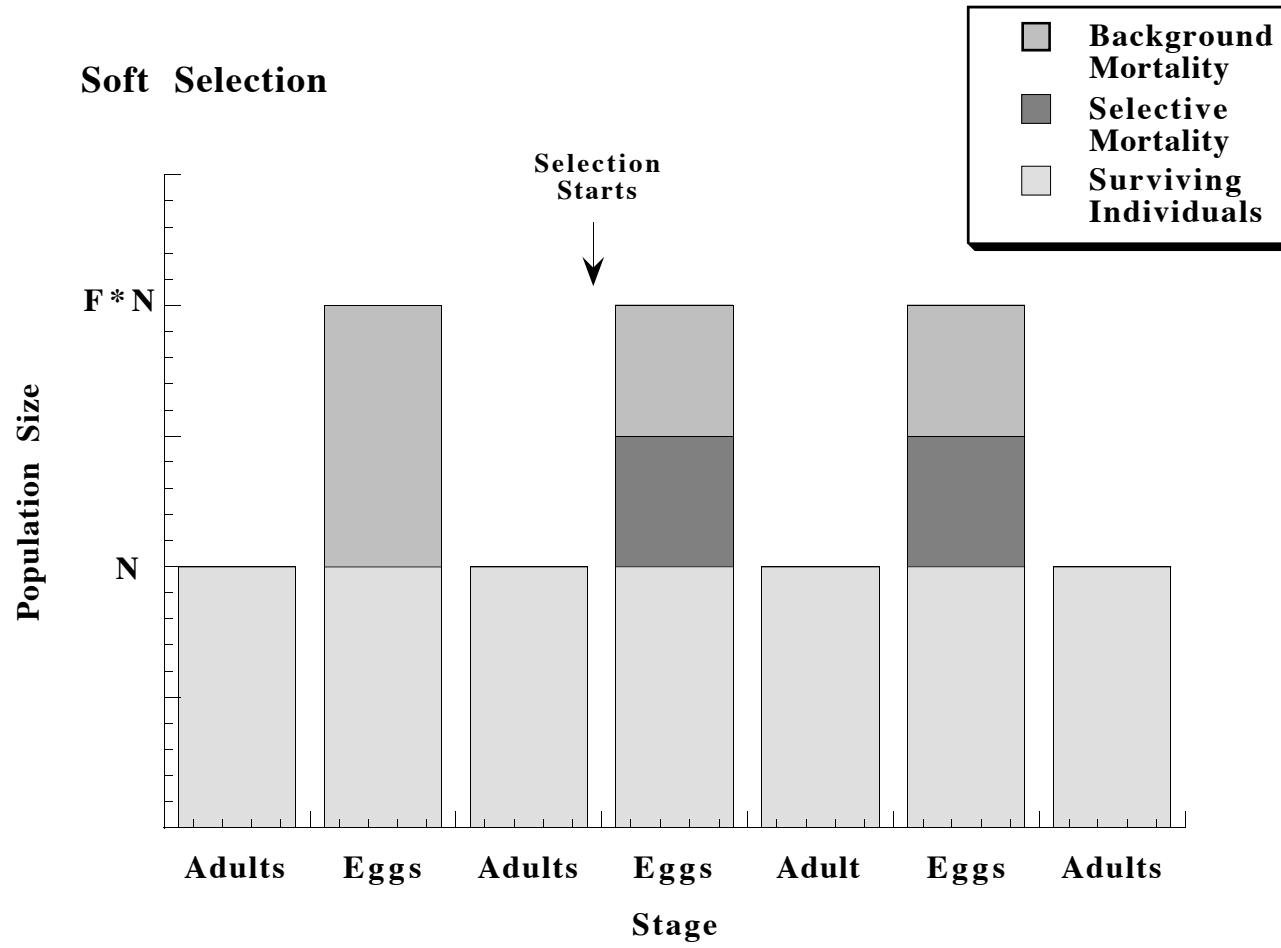


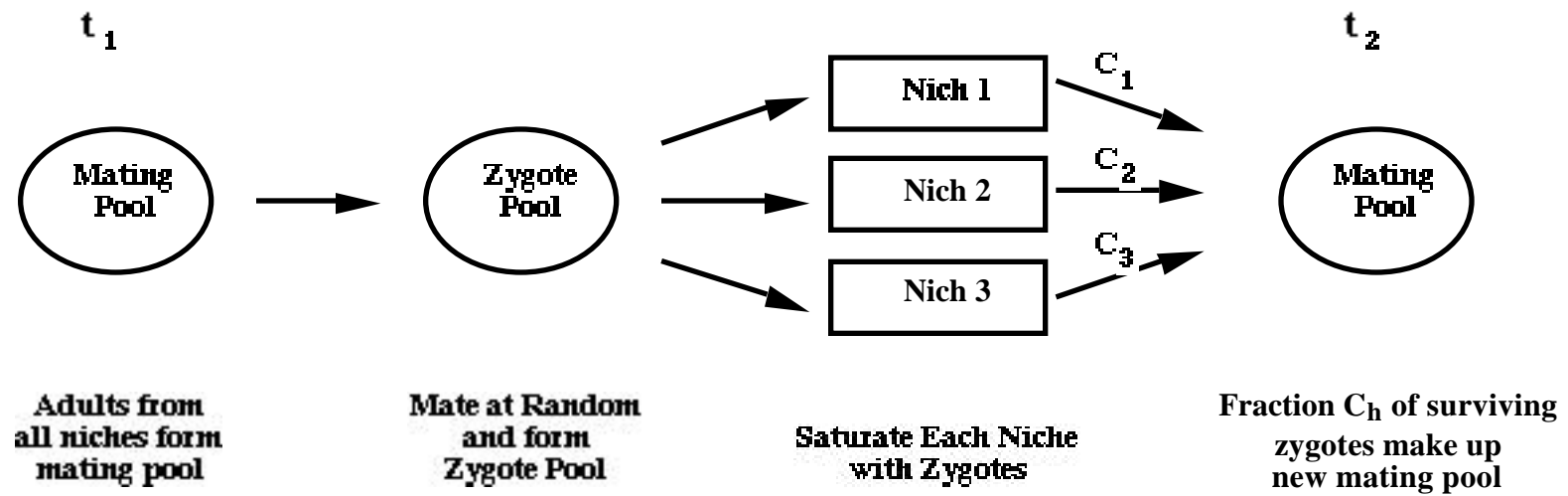
Hard Selection



Soft Selection



Levene's Model of Spatially Varying Selection Generation Cycle



Summary of Models of Selection

MODEL	P'	P	\hat{P}	Polymorphic?	Factor Optimized
Classical	$\frac{P * W}{\bar{W}}$	$\frac{pq(W_1 - W_2)}{\bar{W}}$	$\frac{W_{12} - W_{22}}{2 * W_{12} - W_{11} - W_{22}}$ and $P = 0; P = 1$	Unstable when: $W_{12} < W_{11}, W_{22}$ Stable when: $W_{12} > W_{11}, W_{22}$	\bar{W}
Levene's Spatial Variation	$\frac{P * W_{1,h}}{\bar{W}_h}$	$pq \frac{C_h(W_{1,h} - W_{2,h})}{\bar{W}_h}$	$p=0; p = 1$ and $\frac{C_h(W_{1,h} - W_{2,h})}{\bar{W}_h} = 0$	AM $\frac{W_{12}}{W_{22}} > 1$ or HM $\frac{W_{22}}{W_{12}} < 1$ and AM $\frac{W_{12}}{W_{11}} > 1$ or HM $\frac{W_{11}}{W_{12}} < 1$ Dominance: HM $\frac{W_{11}}{W_{12}} < 1 < AM \frac{W_{12}}{W_{11}}$	$GM(\bar{W})$
Temporally Varying Selection	$\frac{p_t(p_t W_{11,t} + q_t)}{\bar{W}_t}$	Very Complex	Very Complex	No Dominance: GM $\frac{W_{22}}{W_{12}}$ and GM $\frac{W_{11}}{W_{12}} < 1$ Dominance: GM $\frac{W_{22}}{W_{12}} < 1 < AM \frac{W_{22}}{W_{12}}$	

Protected Polymorphism with Temporally Varying Selection

Niche	Fitness			W_{11}/W_{12}	W_{12}/W_{11}	W_{12}/W_{22}	W_{22}/W_{12}
	W_{12}	W_{11}	W_{22}				
1	1.0	1.1	0.9	1.100	0.909	1.222	0.900
2	1.0	0.2	1.0	0.200	5.000	2.000	1.000
3	1.0	1.1	0.9	1.100	0.909	1.222	0.900
4	1.0	0.7	1.0	0.700	1.429	0.700	1.000
5	1.0	0.5	1.1	0.500	2.000	0.455	1.100
6	1.0	0.3	1.0	0.300	3.333	03.00	1.000

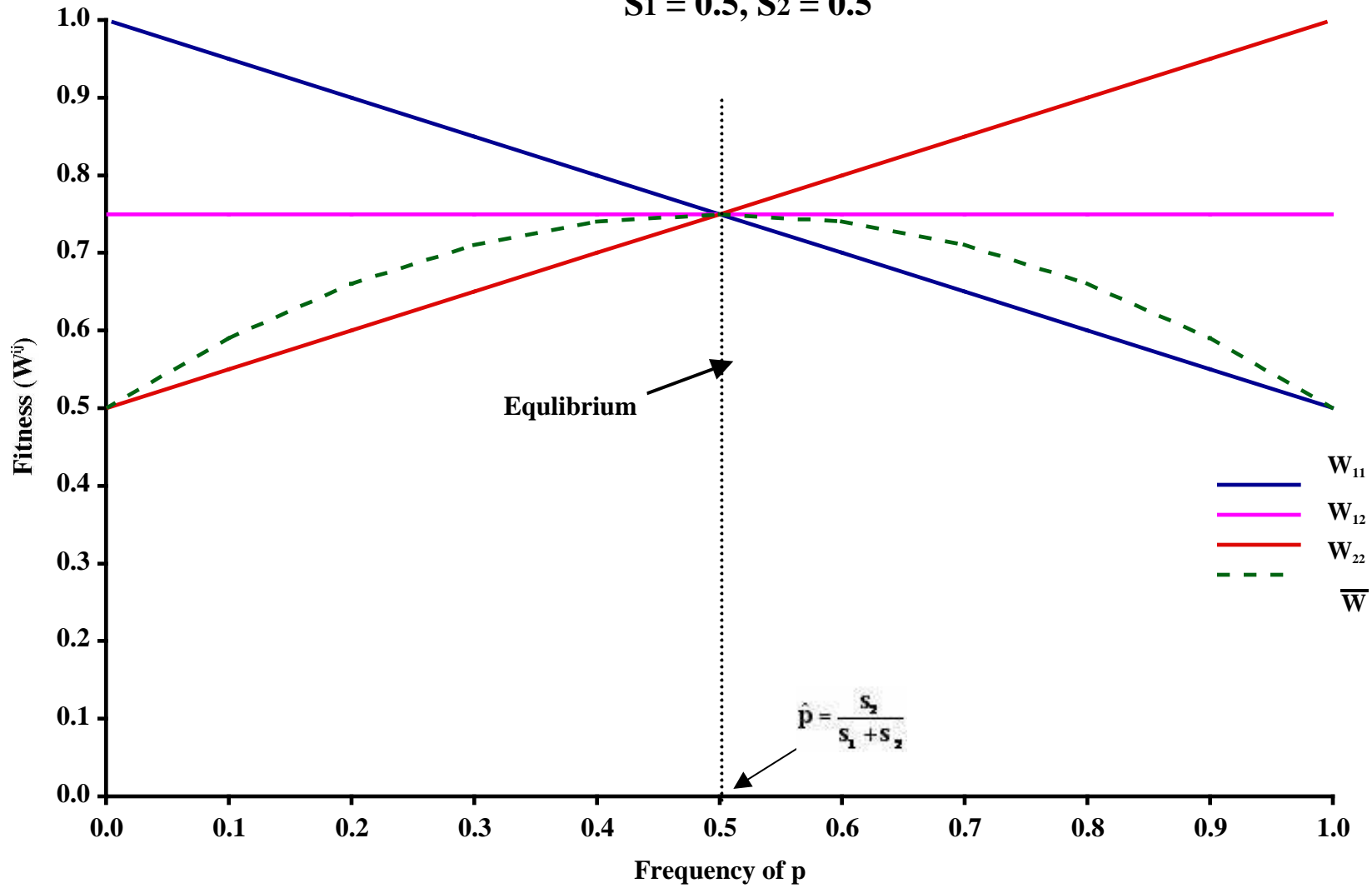
$AM(W_{12}/W_{11}) = 2.2633$

$AM(W_{12}/W_{22}) = 0.6831$

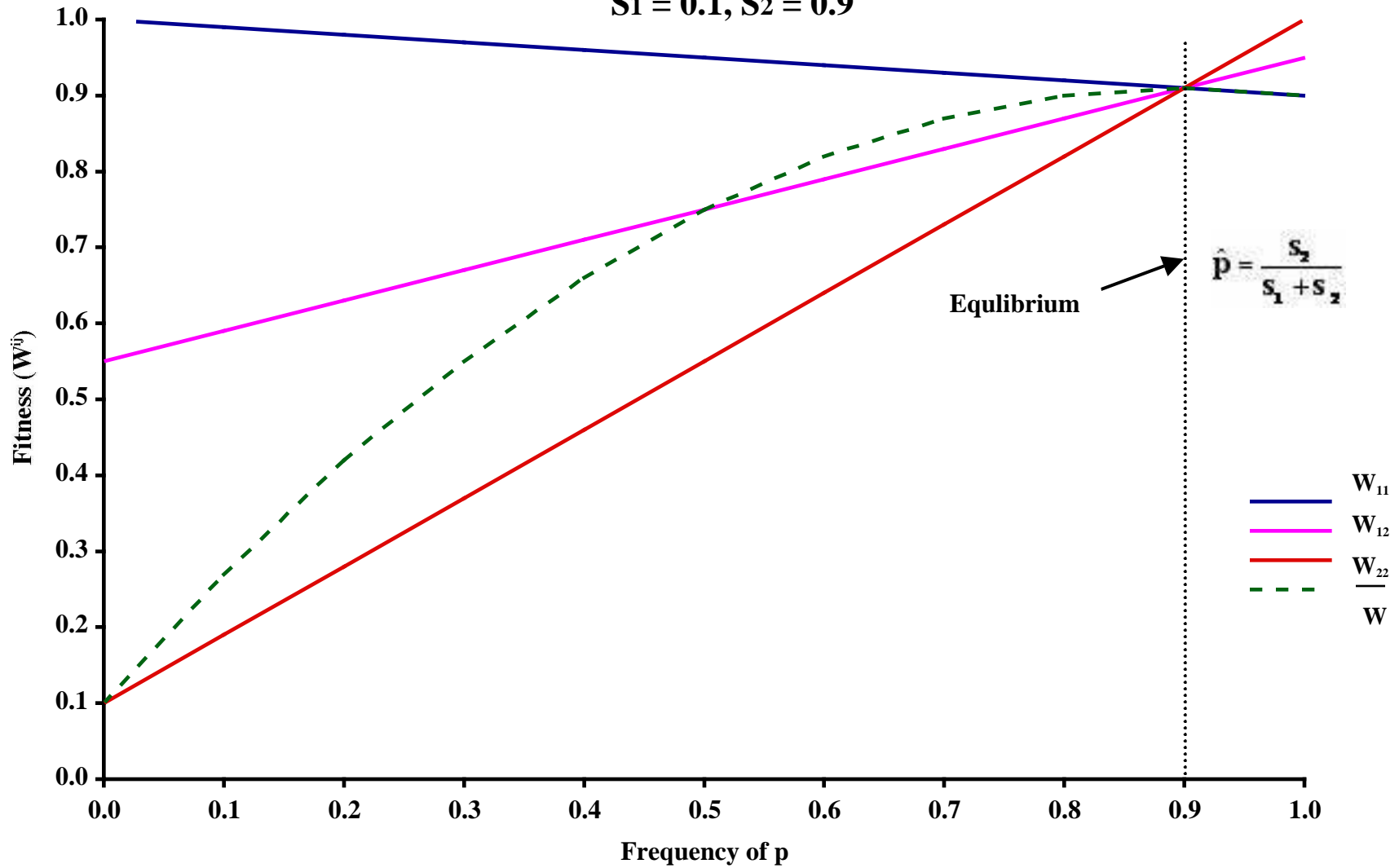
$HM(W_{11}/W_{12}) = 0.4418$

$HM(W_{22}/W_{12}) = 0.9756$

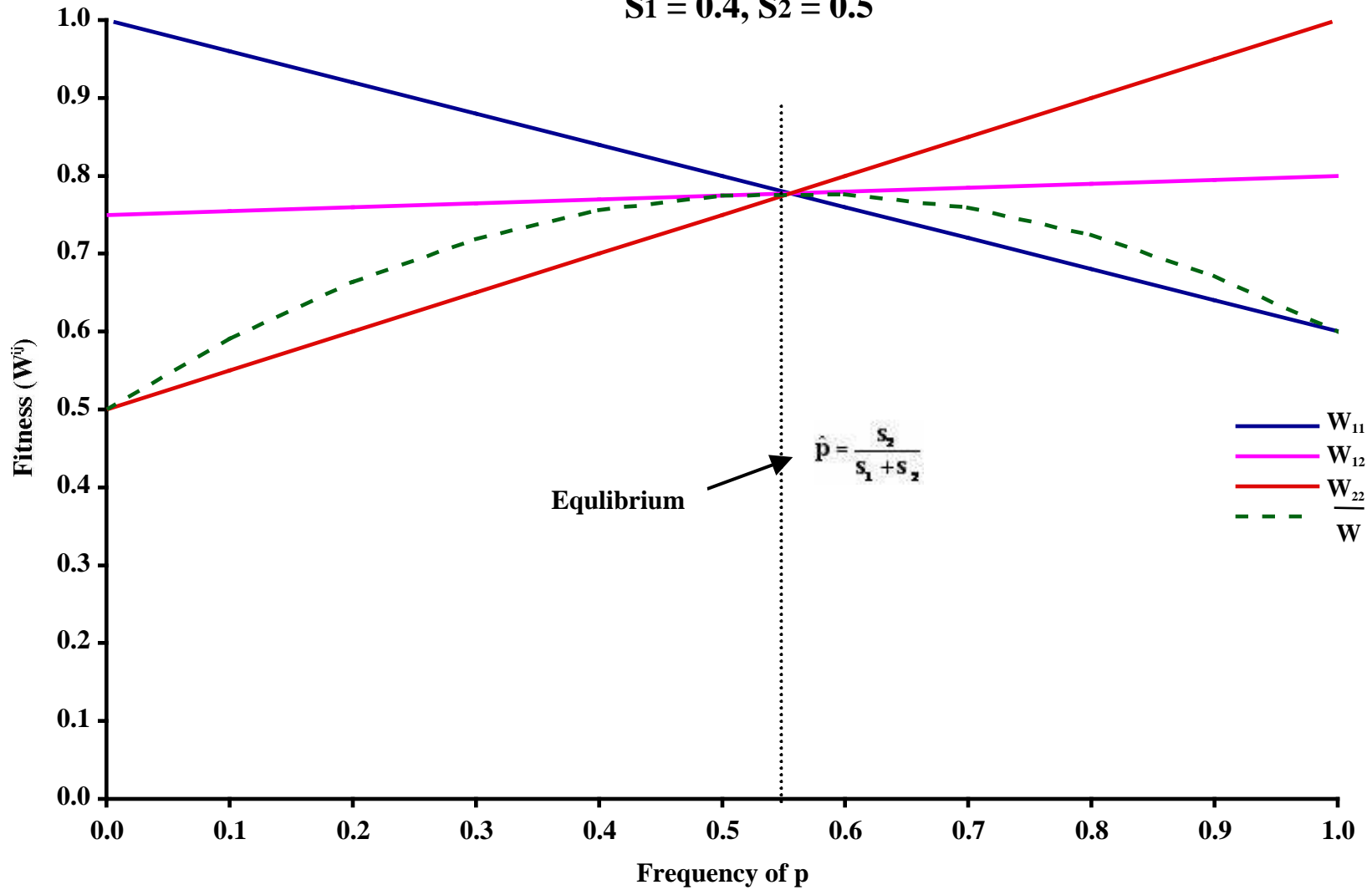
**Genotype Fitnesses with
Frequency Dependent Selection
 $S_1 = 0.5, S_2 = 0.5$**



**Genotype Fitnesses with
Frequency Dependent Selection
 $S_1 = 0.1, S_2 = 0.9$**



**Genotype Fitnesses with
Frquency Dependent Selection
 $S_1 = 0.4, S_2 = 0.5$**



**Genotype Fitnesses with
Frequency Dependent Selection
 $S_1 = 0.2, S_2 = 0.3$**

