

Gamete Strategies

Matthew Routley









SURVIVAL

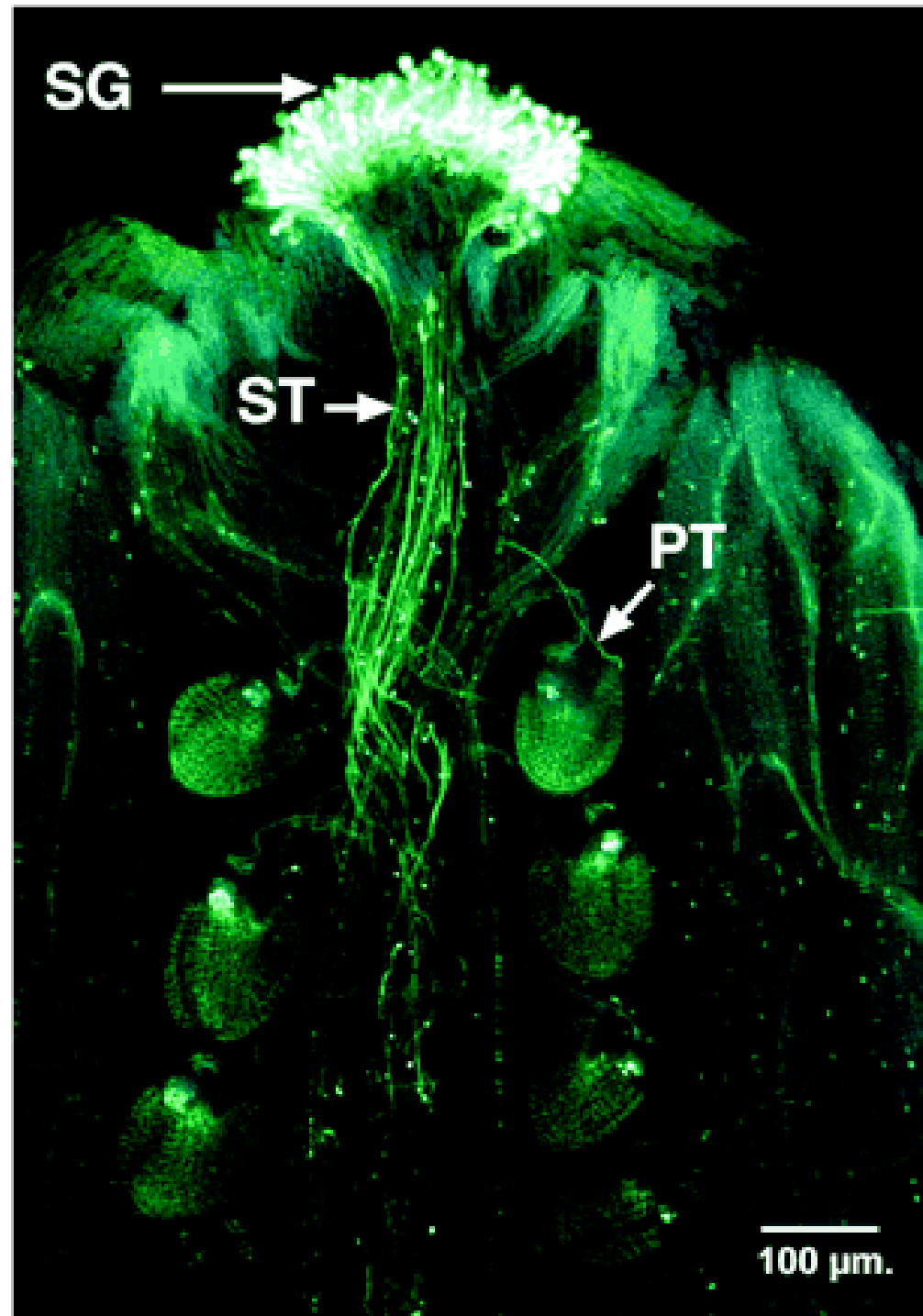
OF THE FITTEST



Shadowrun and Survival of the Fittest are Registered
Trademarks of WizKids LLC. All Rights Reserved.
www.wizkidsgames.com Art by Adi Granov

WWW.SHADOWRUNRPG.COM





Production & presentation



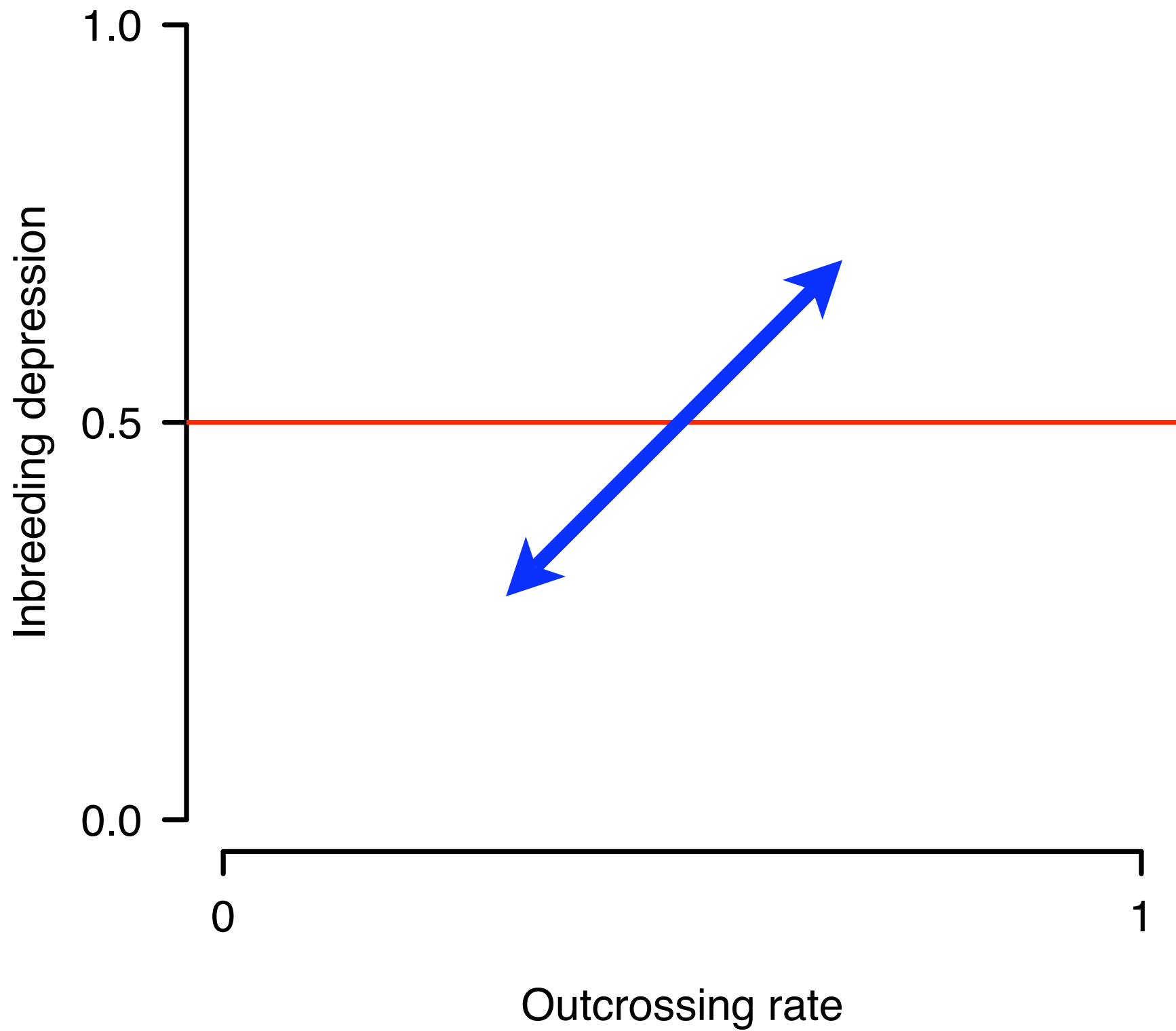


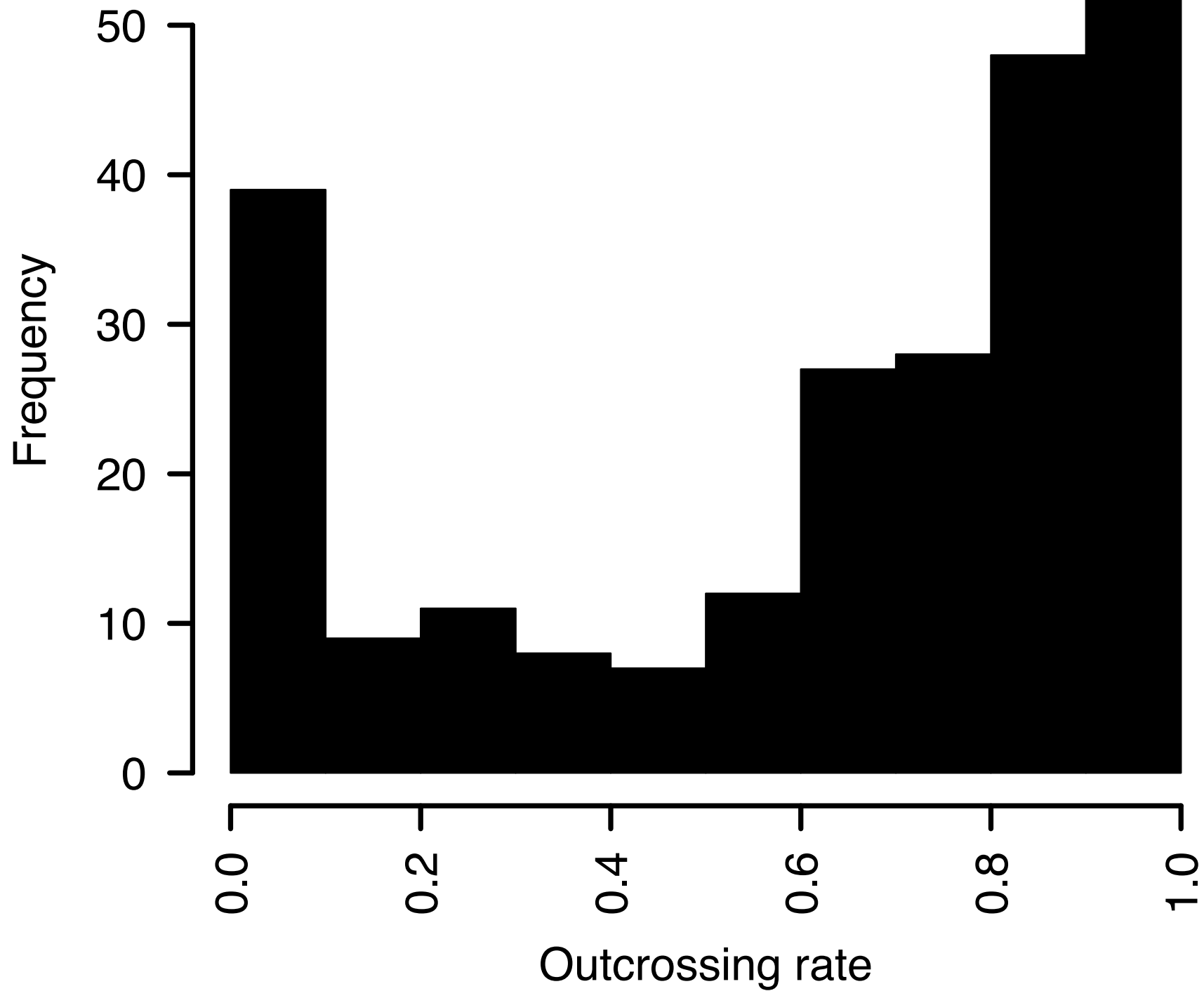


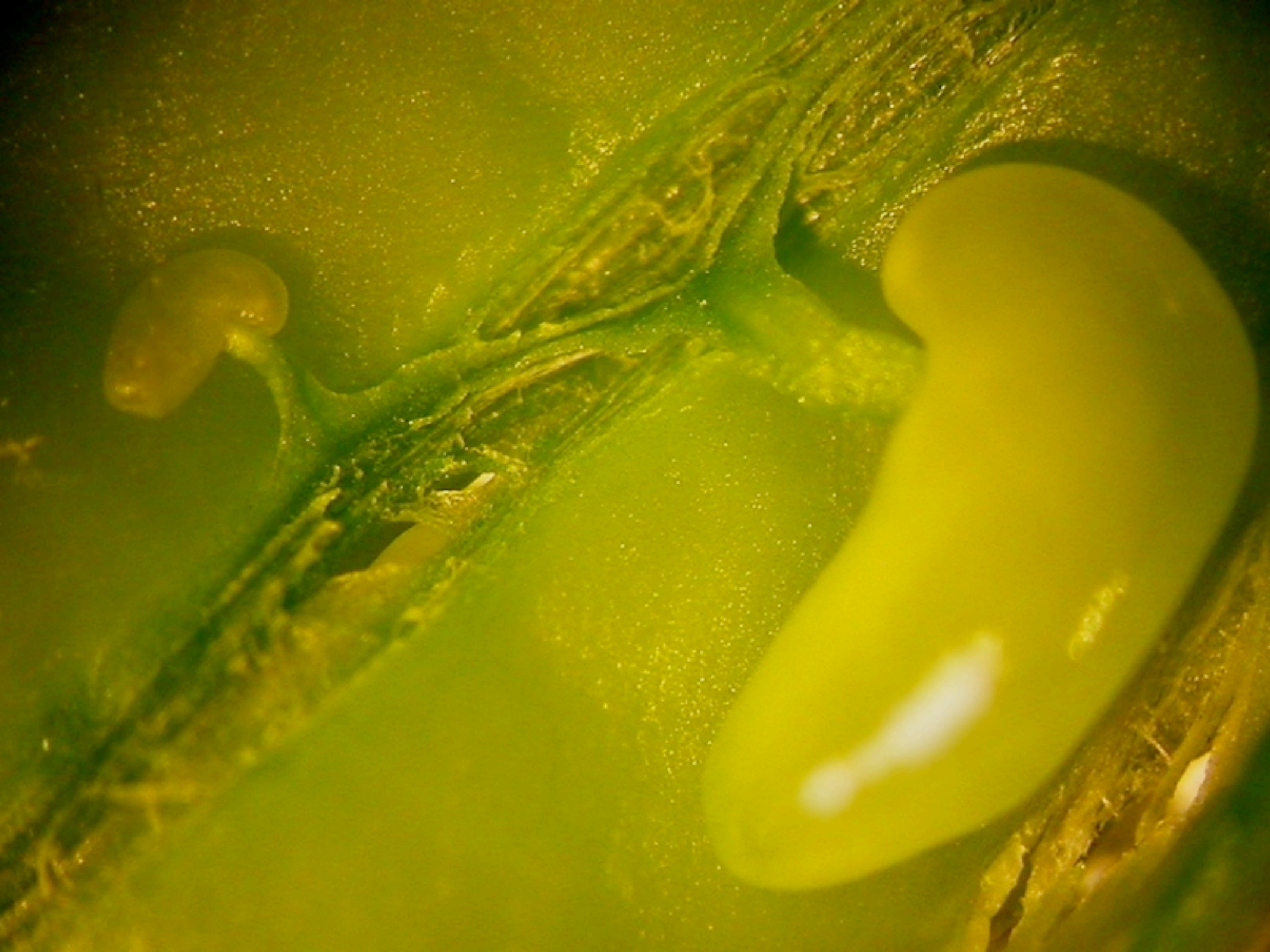


	Outcrosser		Selfer
♀ seed	1		1
♂ seed	0		1
♂ export	1		1
Genomes	2	<	3



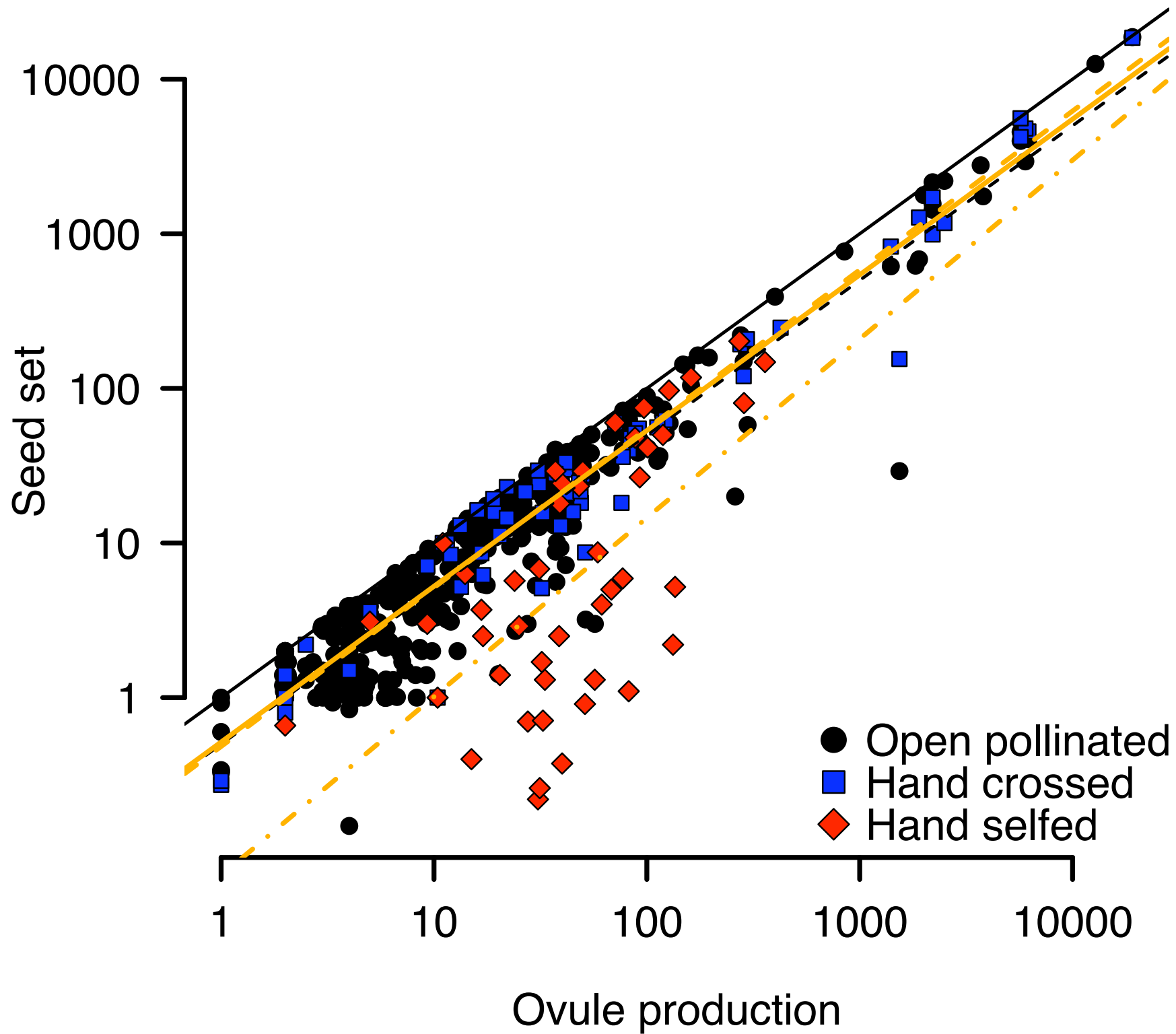


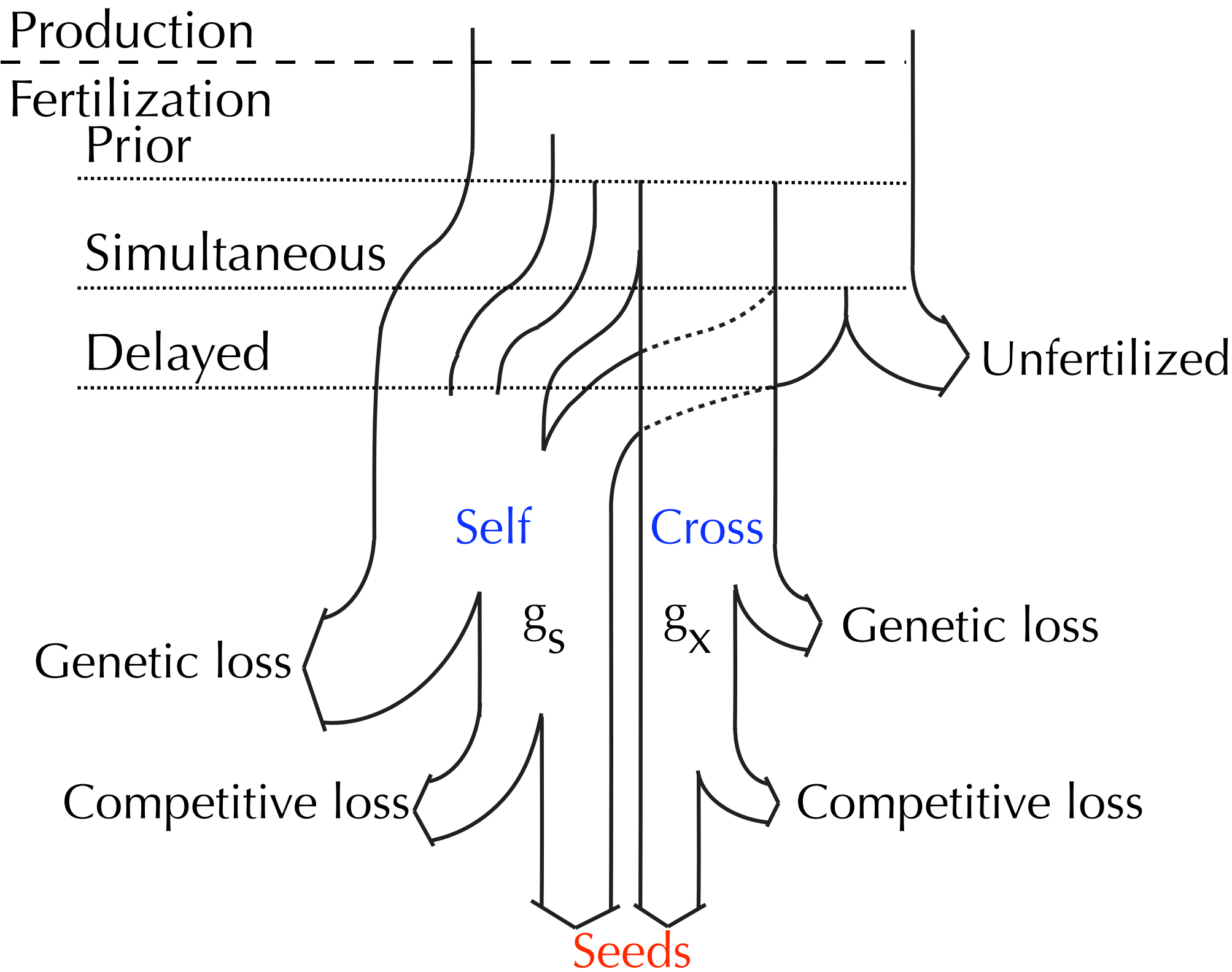




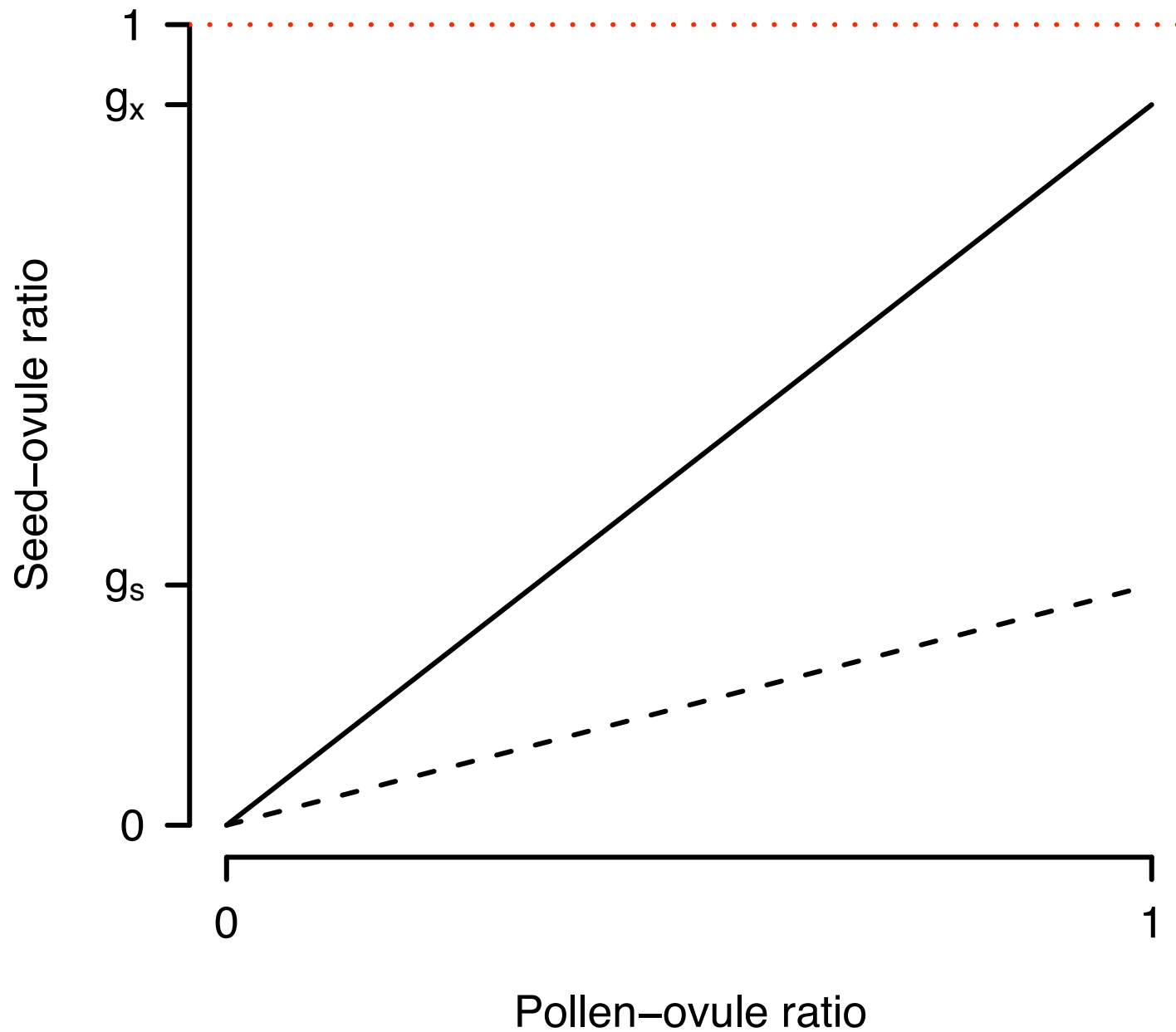
Though I do not believe that a plant
will spring up where no seed has
been, I have great faith in a seed.
Convince me that you have a seed
there, and I am prepared to expect
wonders.

Henry David Thoreau

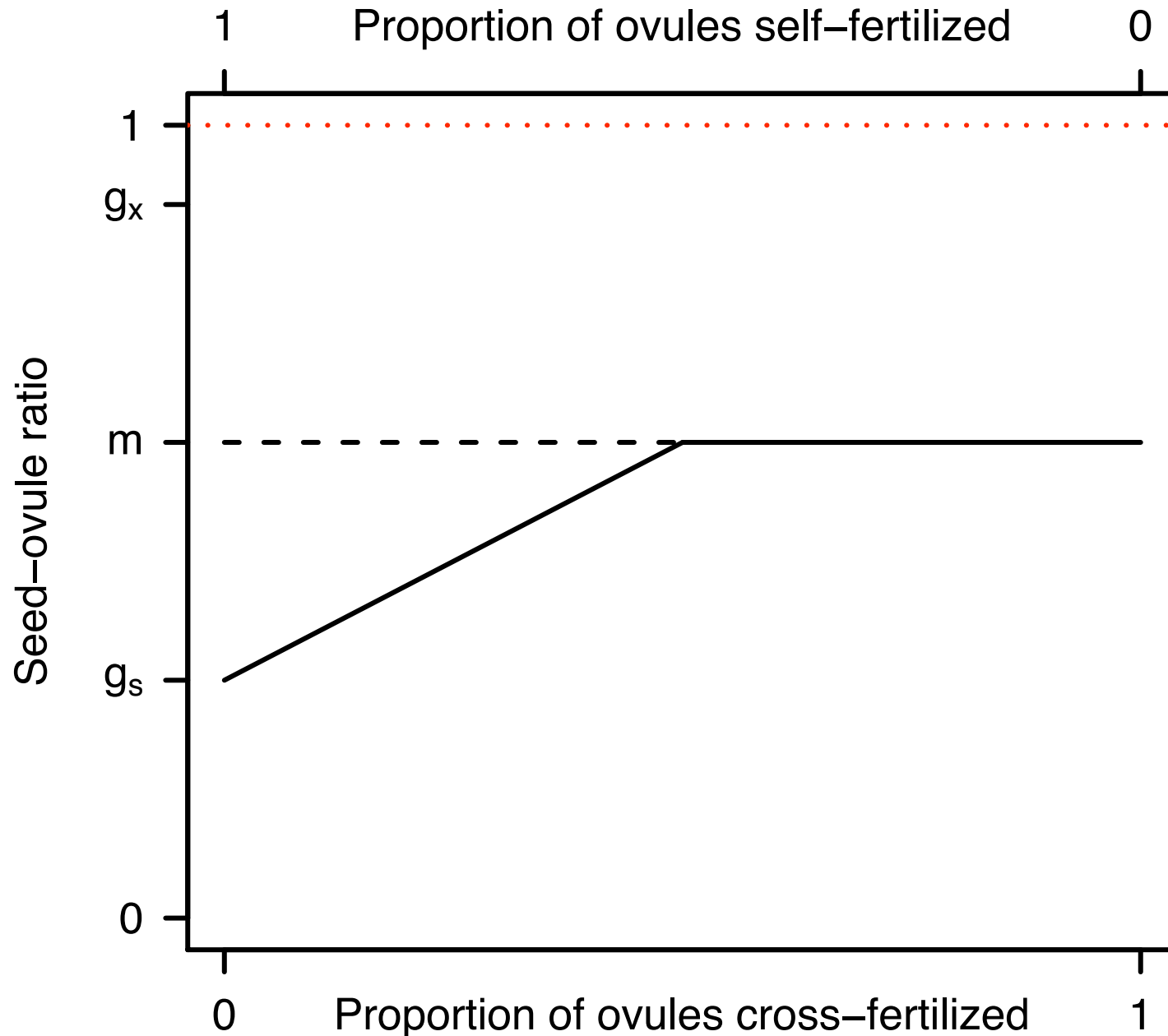




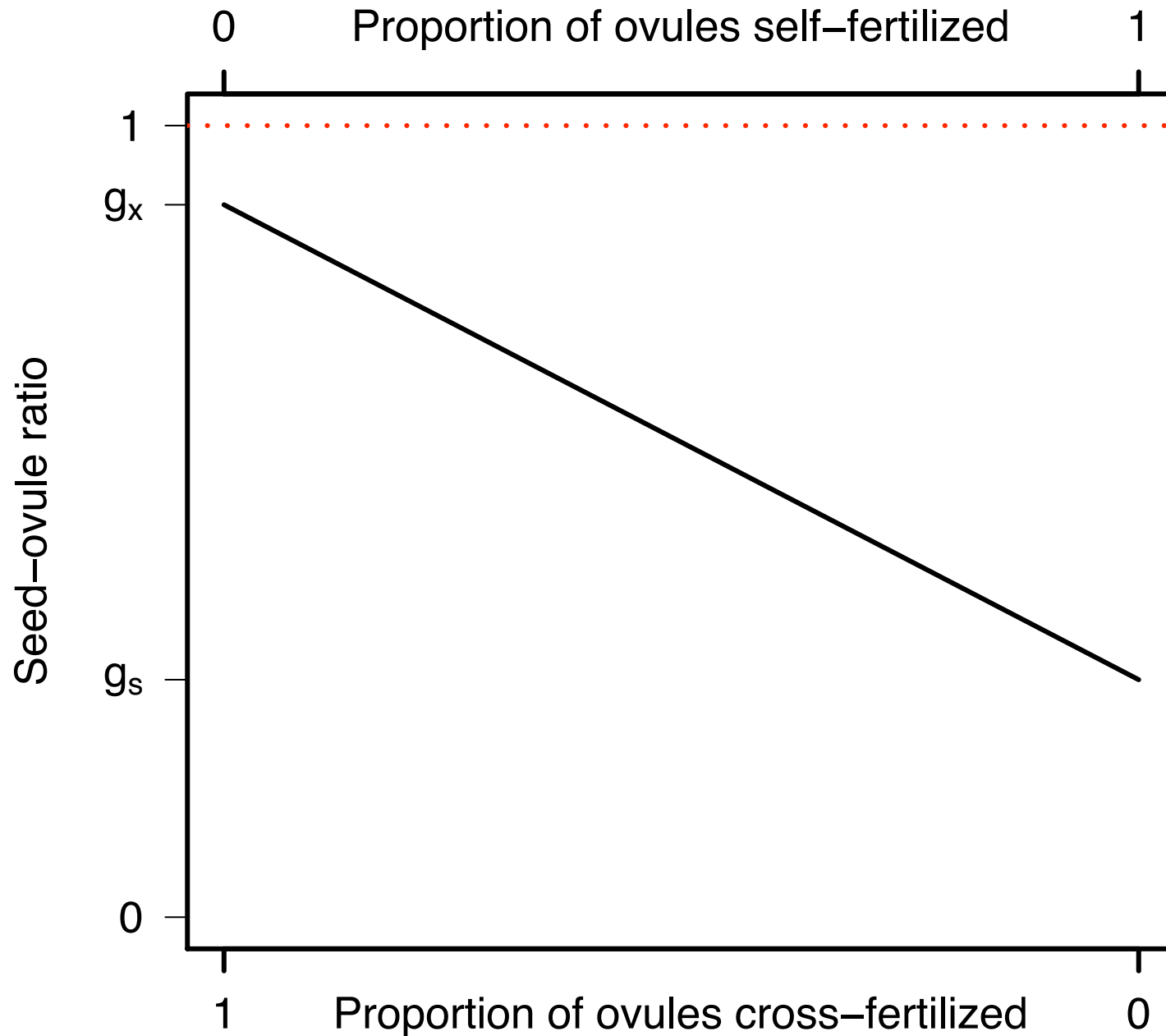
Pollen limitation

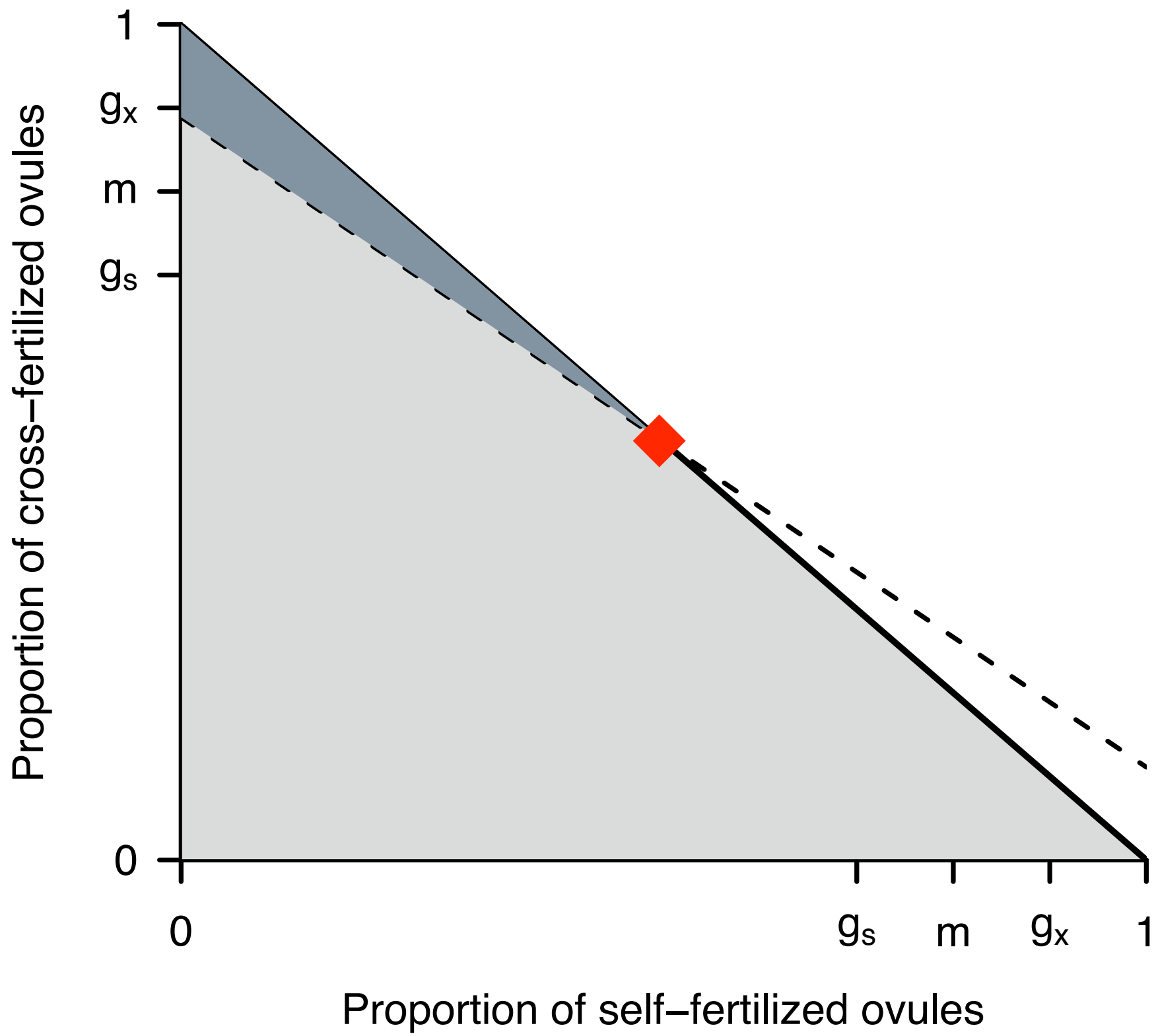


Resource limitation



Ovule limitation

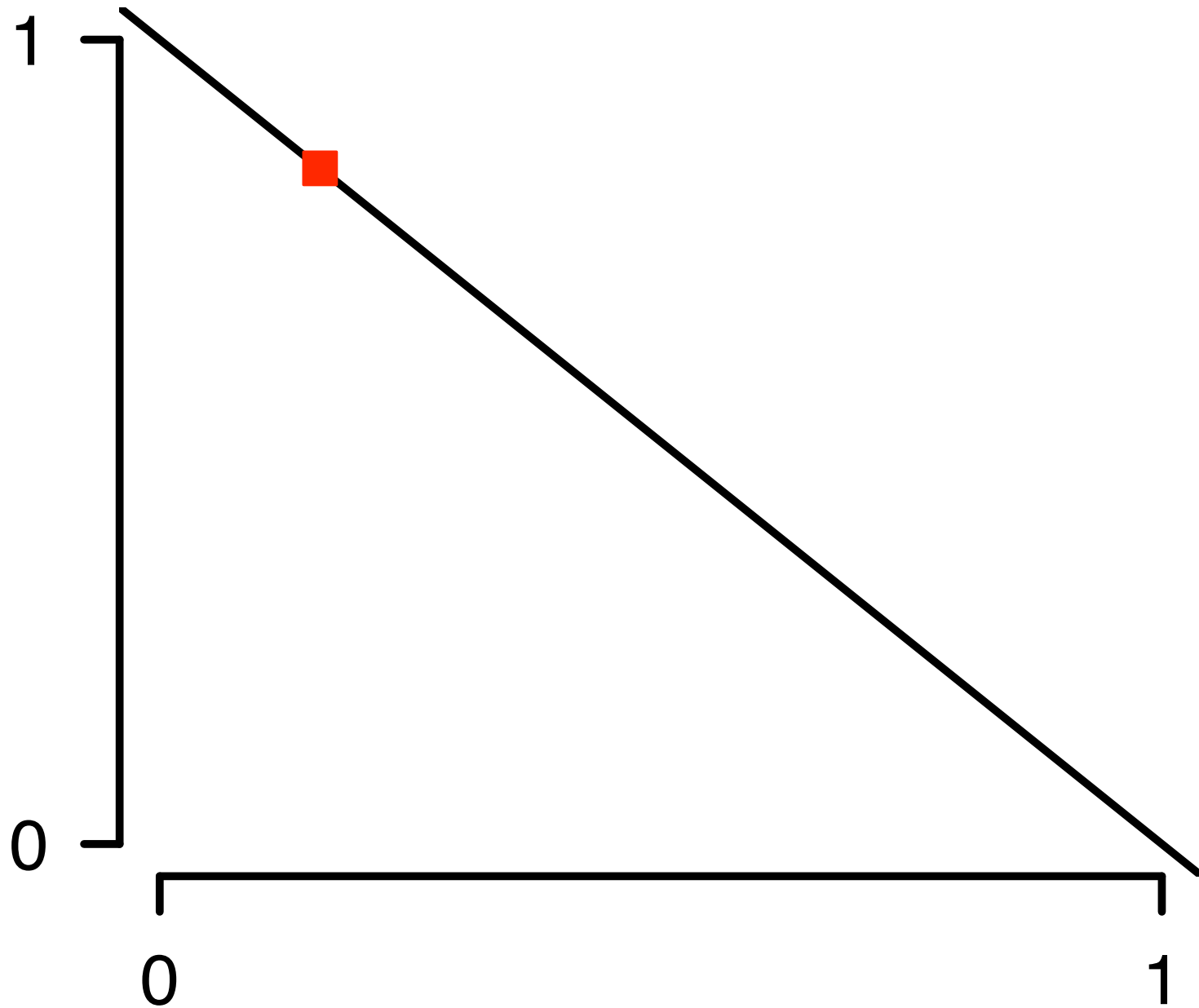




Reproductive compensation

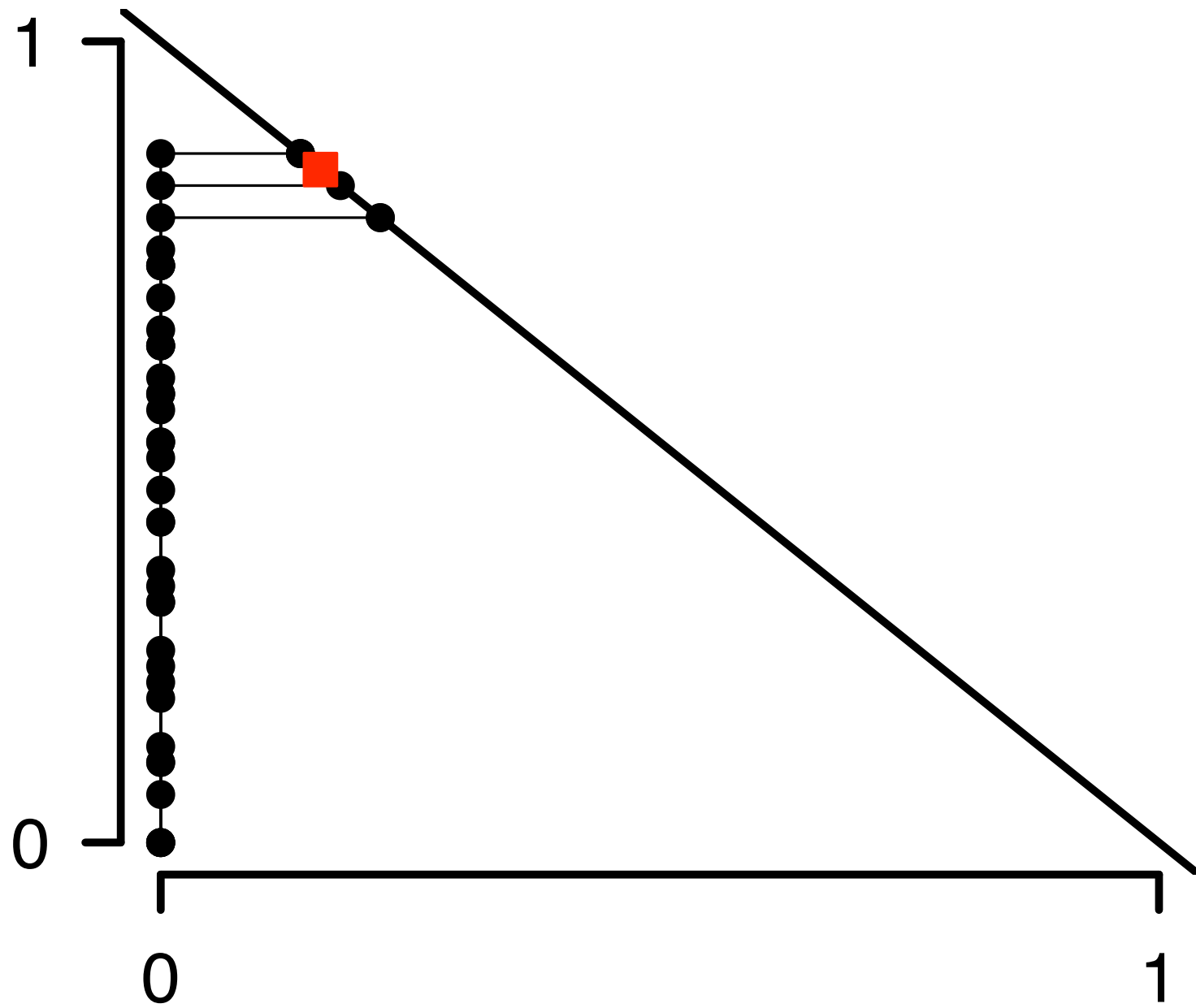
- Produce “excess” ovules
- Absorb deaths of low quality offspring
- Capitalize on two-fold advantage
- Mixed mating favoured when $g_x > m > g_s$

Proportion of cross-fertilized ovules



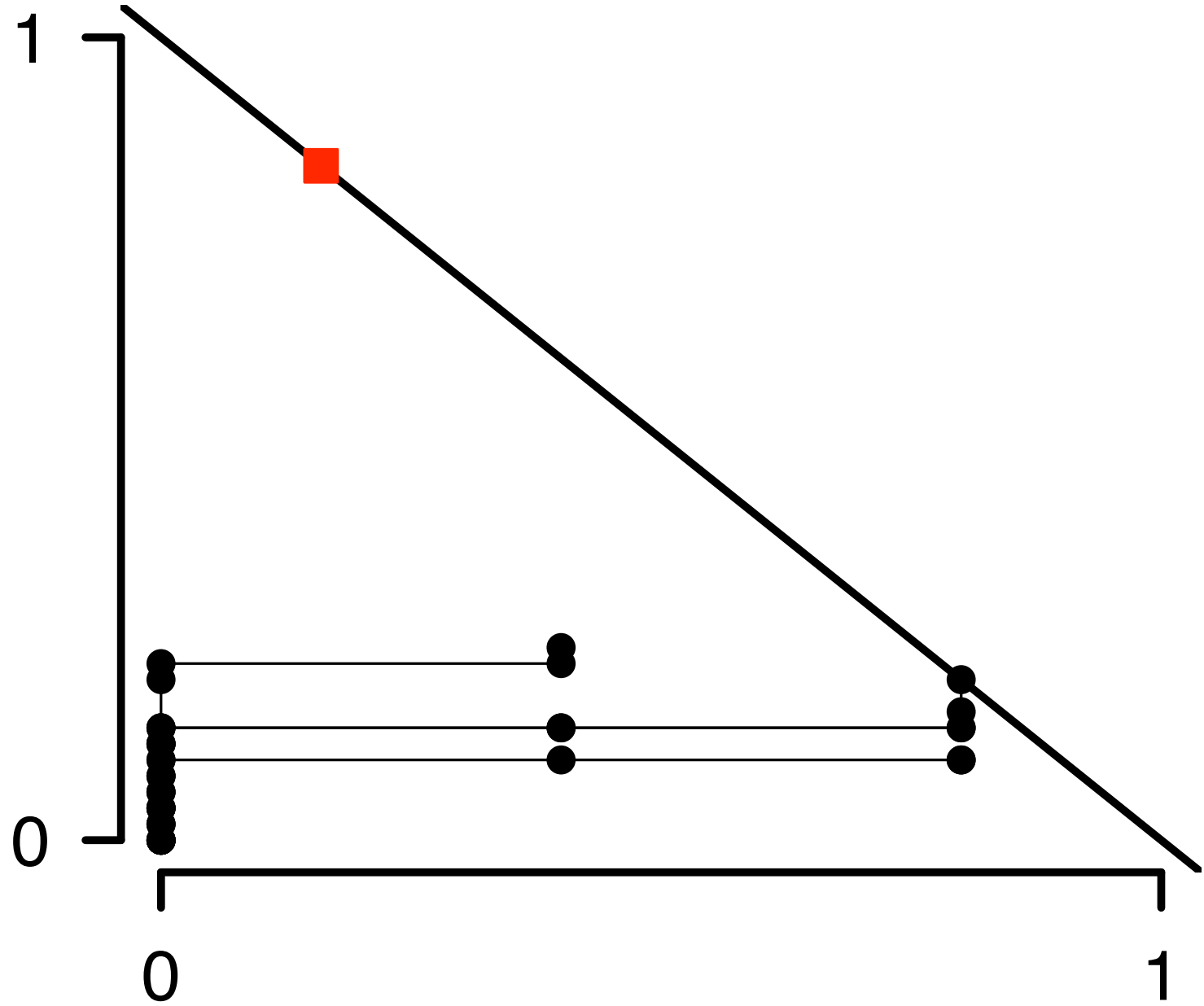
Proportion of self-fertilized ovules

Proportion of cross-fertilized ovules



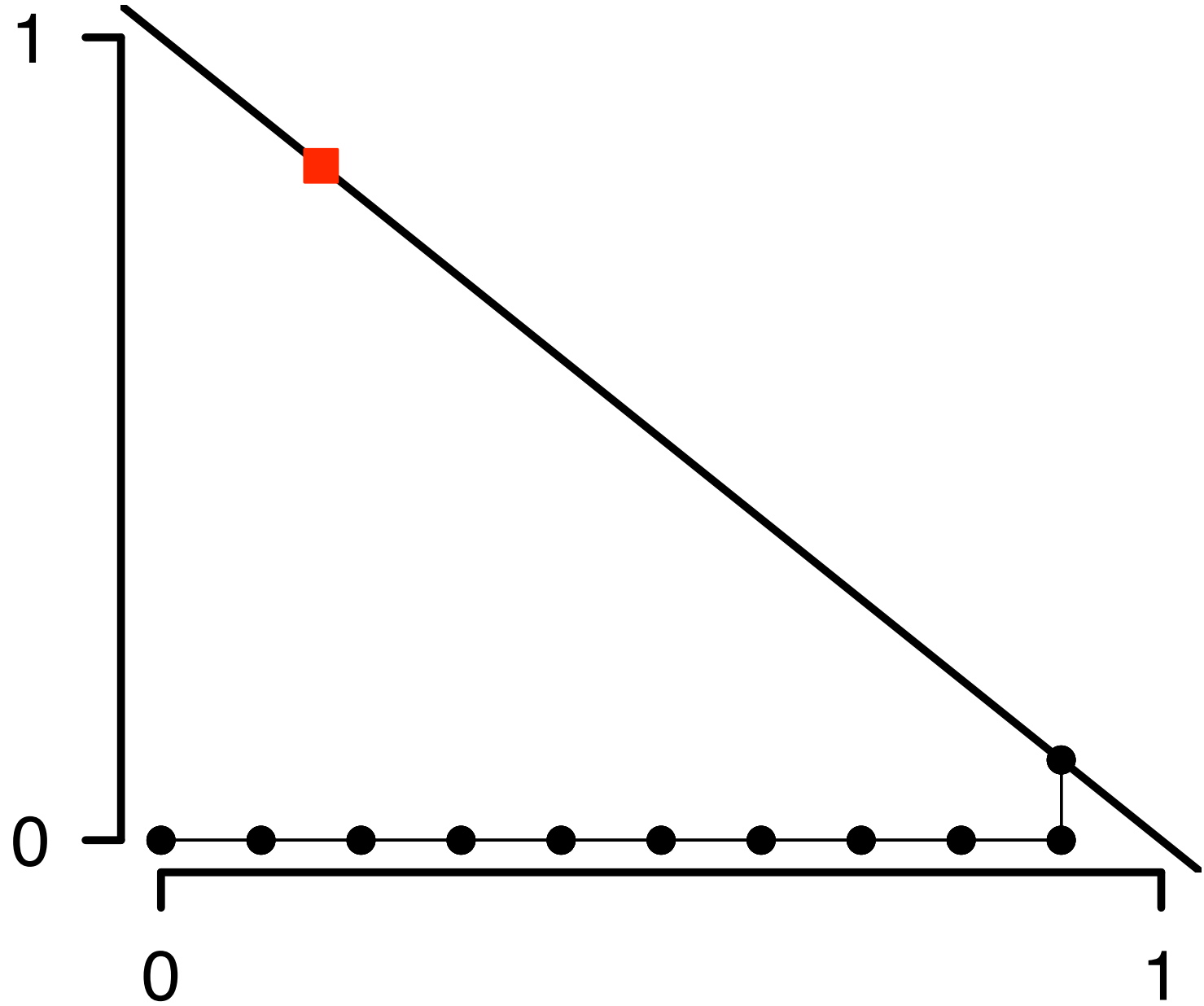
Proportion of self-fertilized ovules

Proportion of cross-fertilized ovules



Proportion of self-fertilized ovules

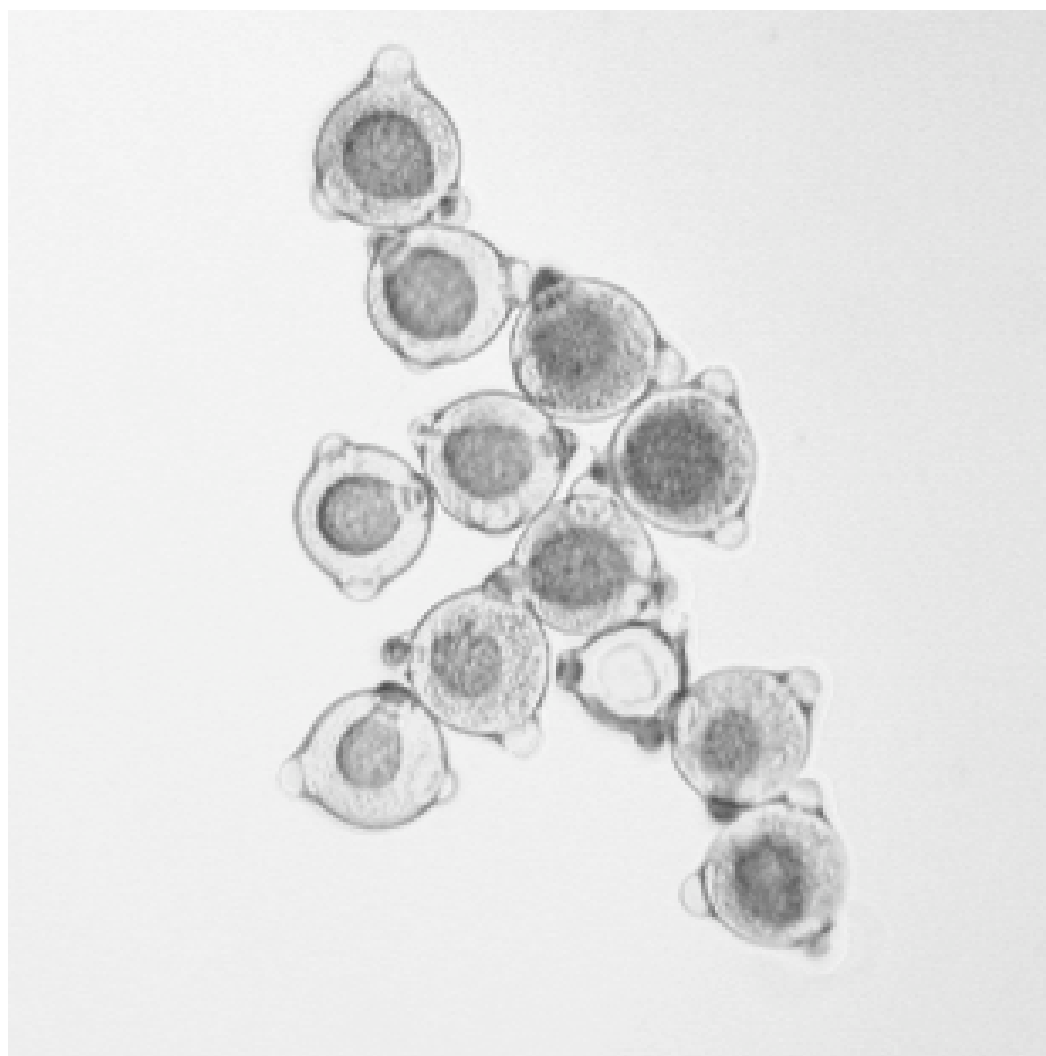
Proportion of cross-fertilized ovules



Proportion of self-fertilized ovules

Ovules

- Seed-ovule ratios $\ll 1$
- Three limits on seed production
- Reproductive compensation
- Optimal mixed mating
- Ecological influences on reproduction
- Gamete perspective solves two mysteries



Production





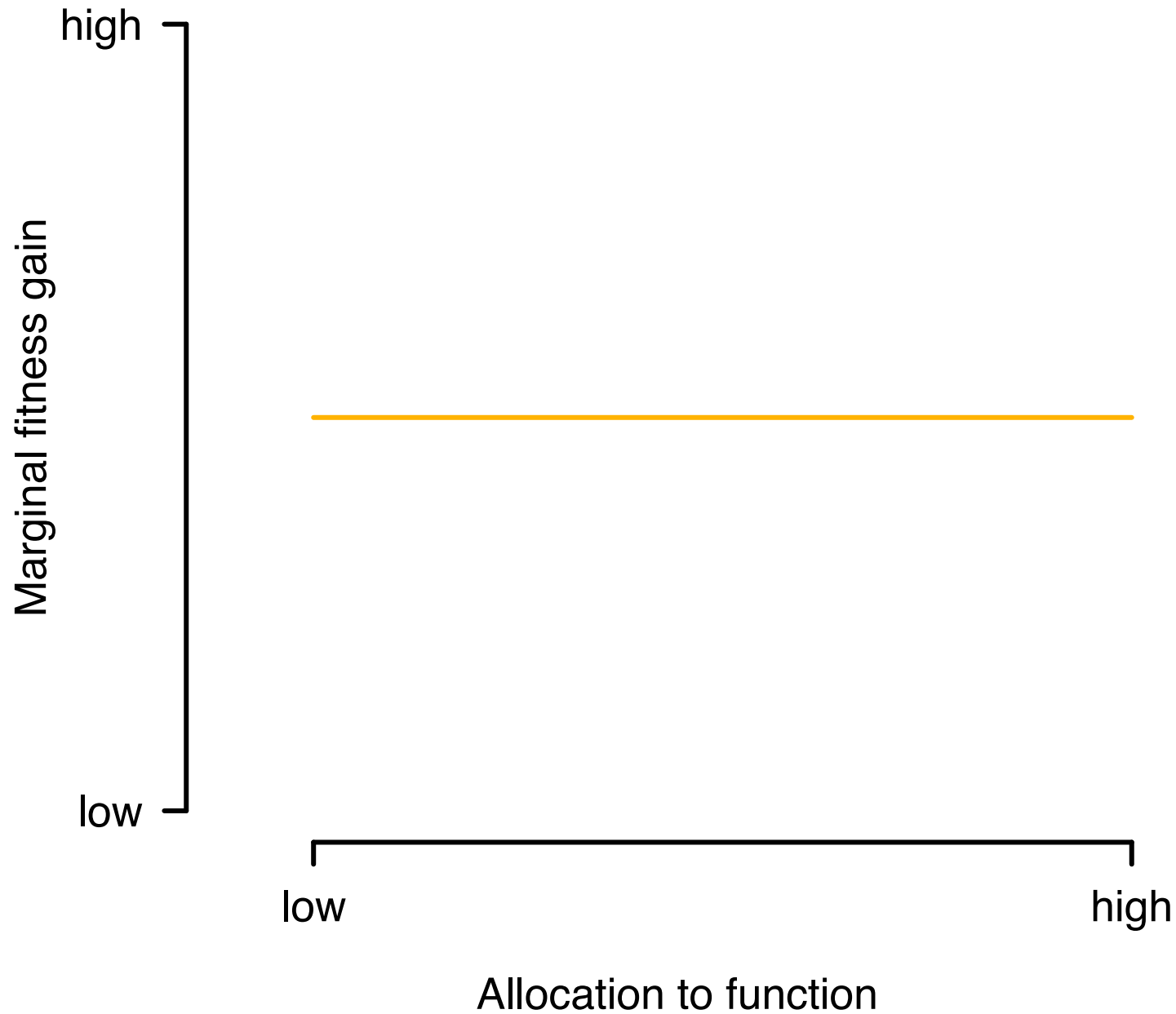
Removed

Exported

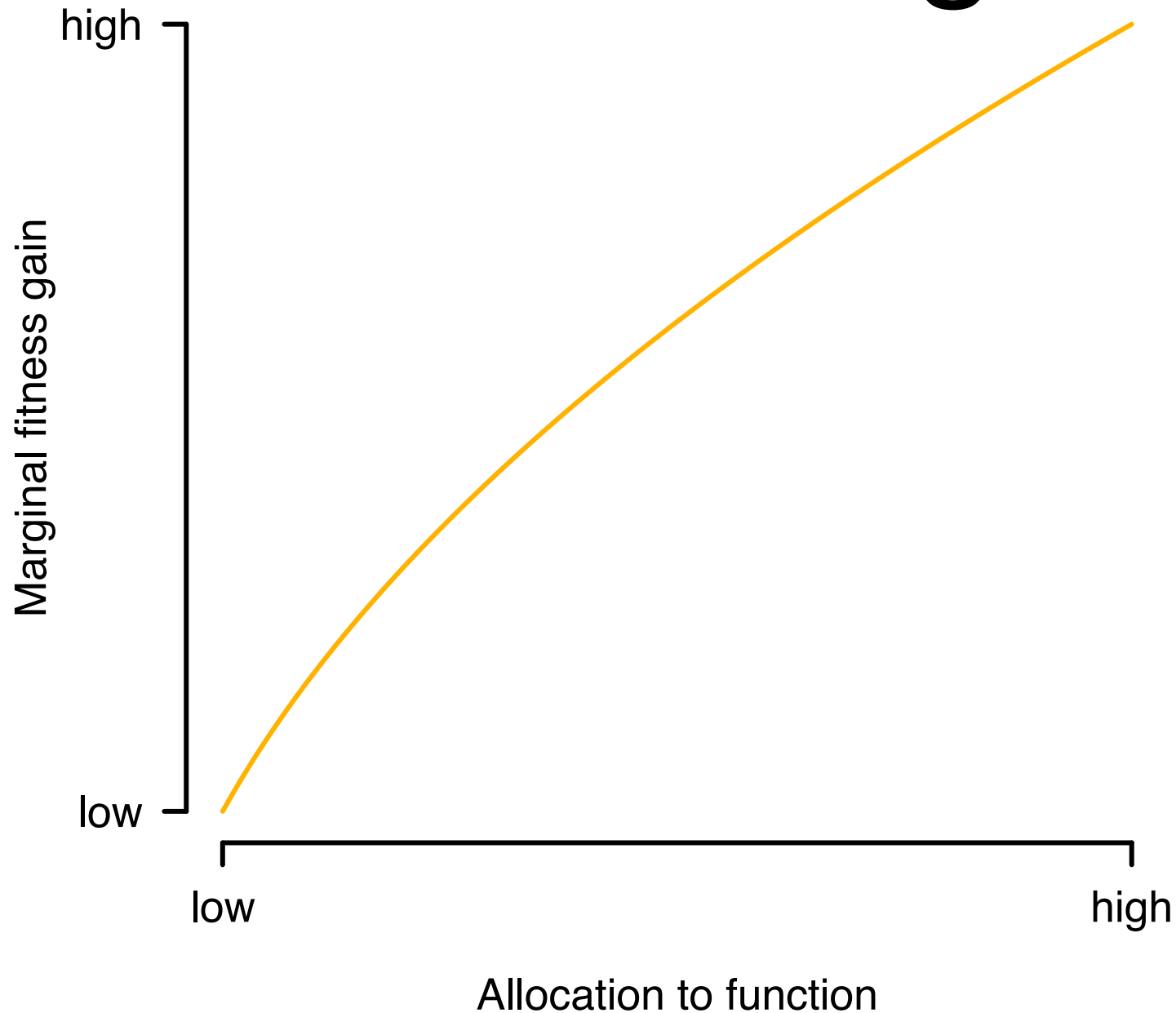
 Success

Gain curves

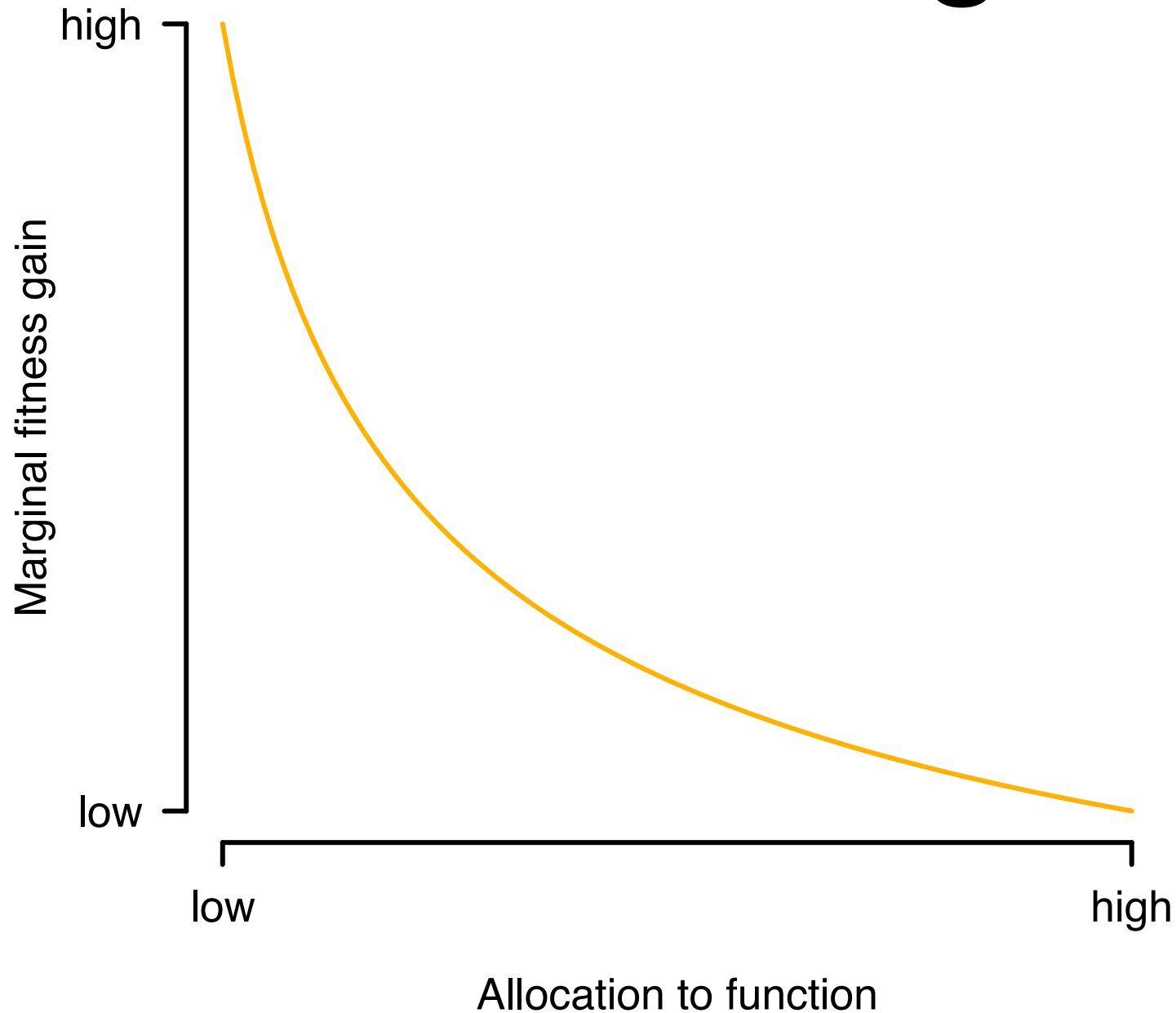
Linear



Accelerating



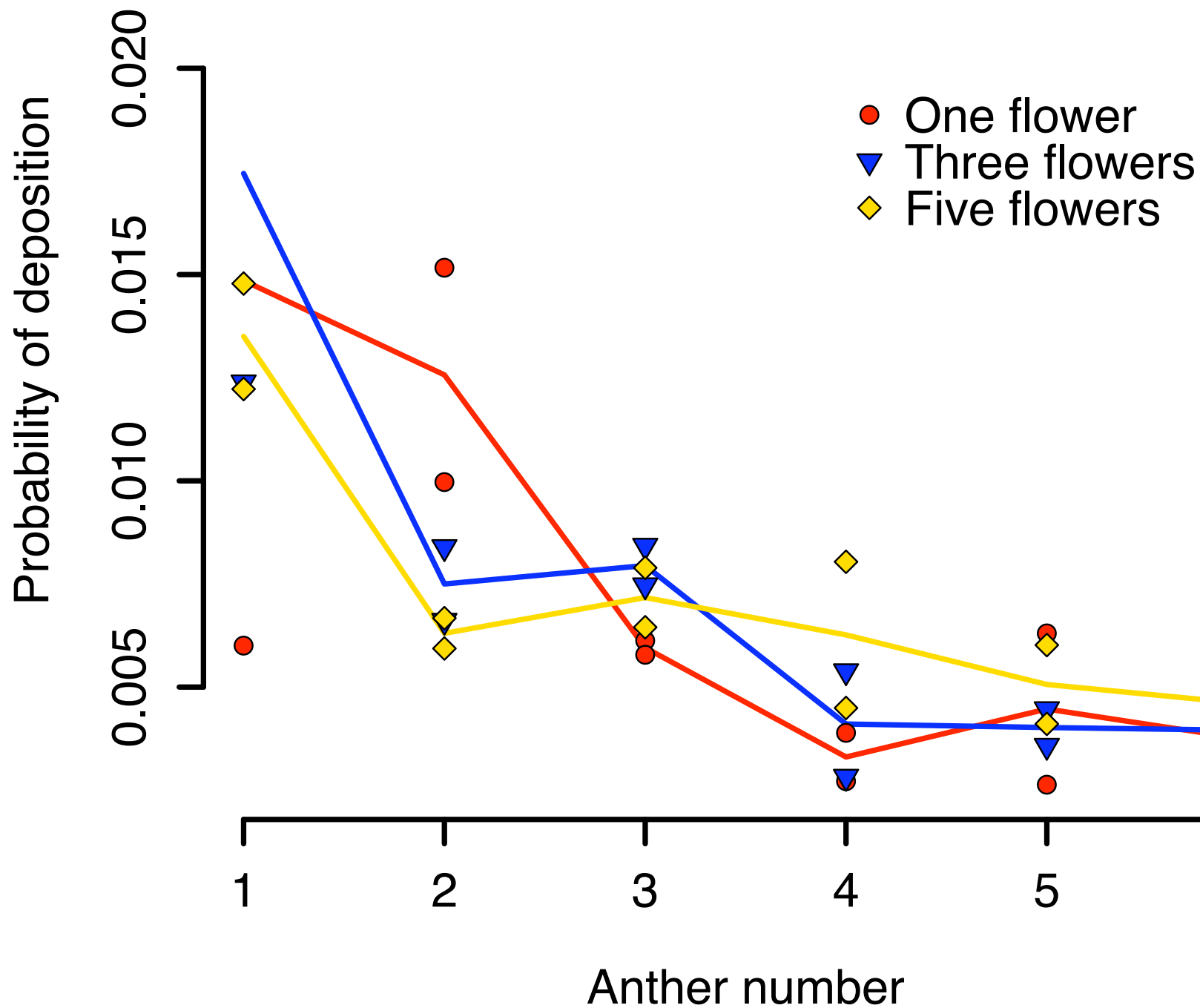
Decelerating



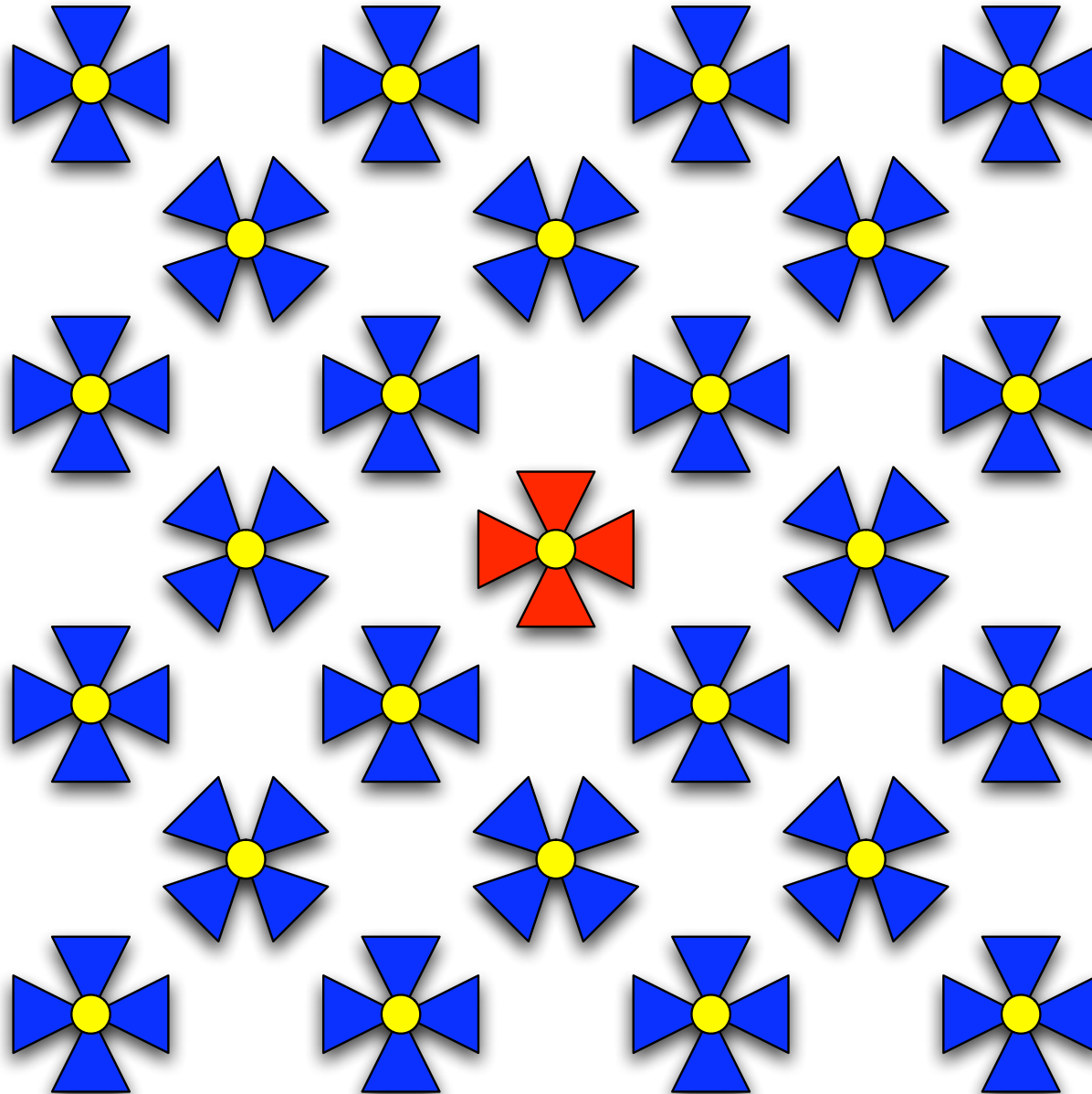


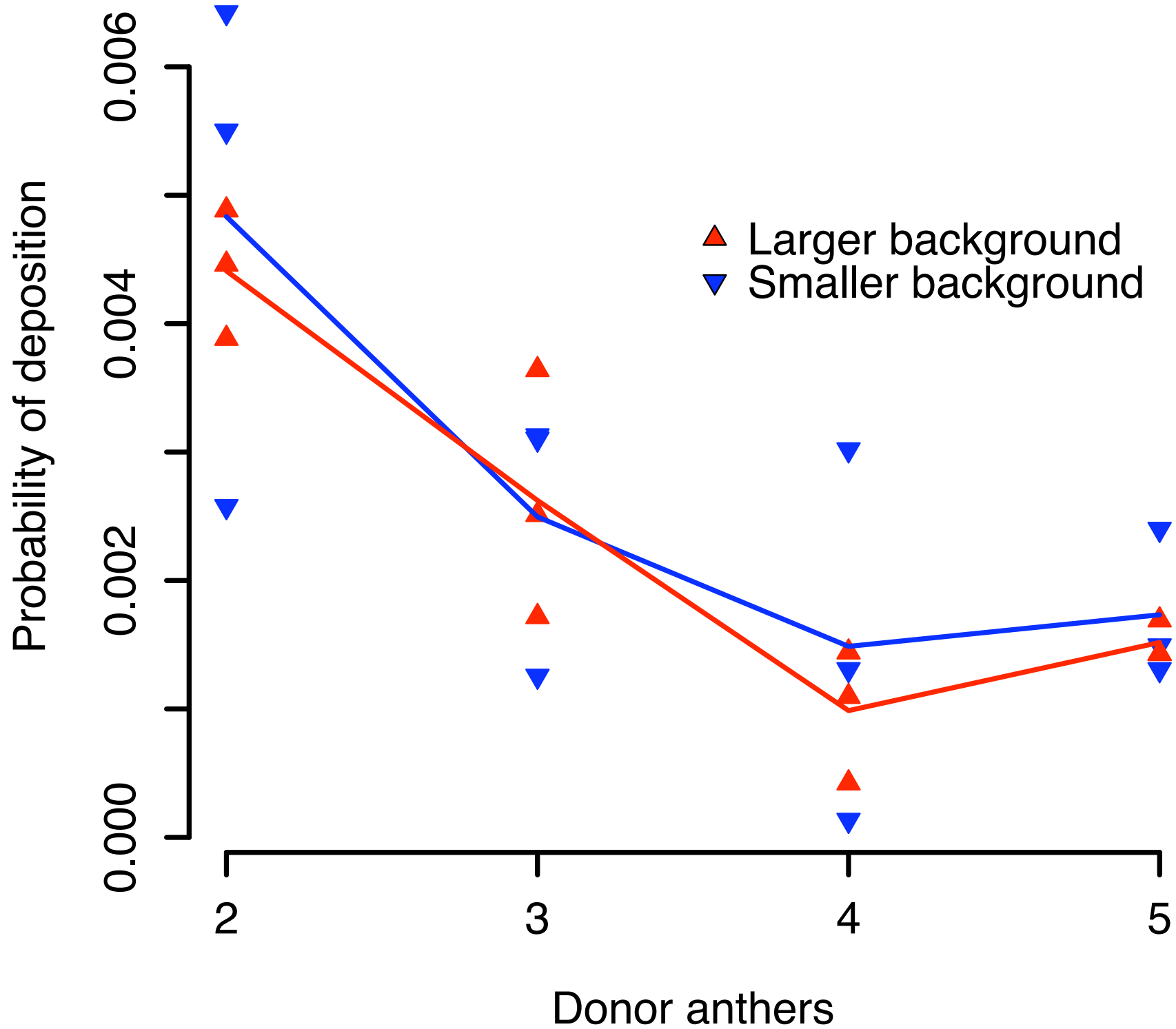
Gain curve design

<u>Anthers/ flower</u>	<u>Plants</u>		<u>Flowers</u>
1	30		1
2	15		3
3	10	X	5
4	7		
5	6		
6	5		



Competition design





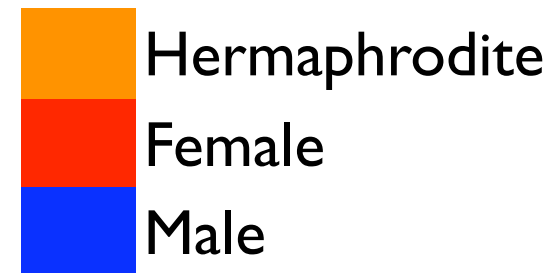
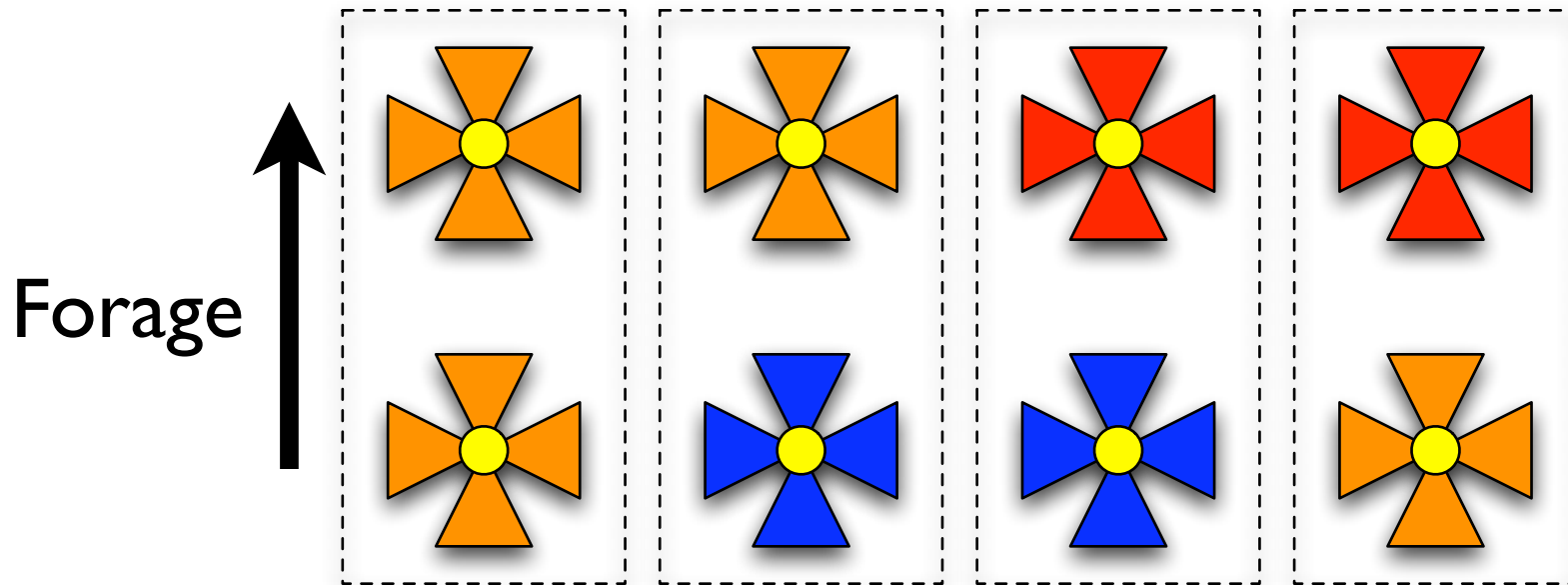
Pollen

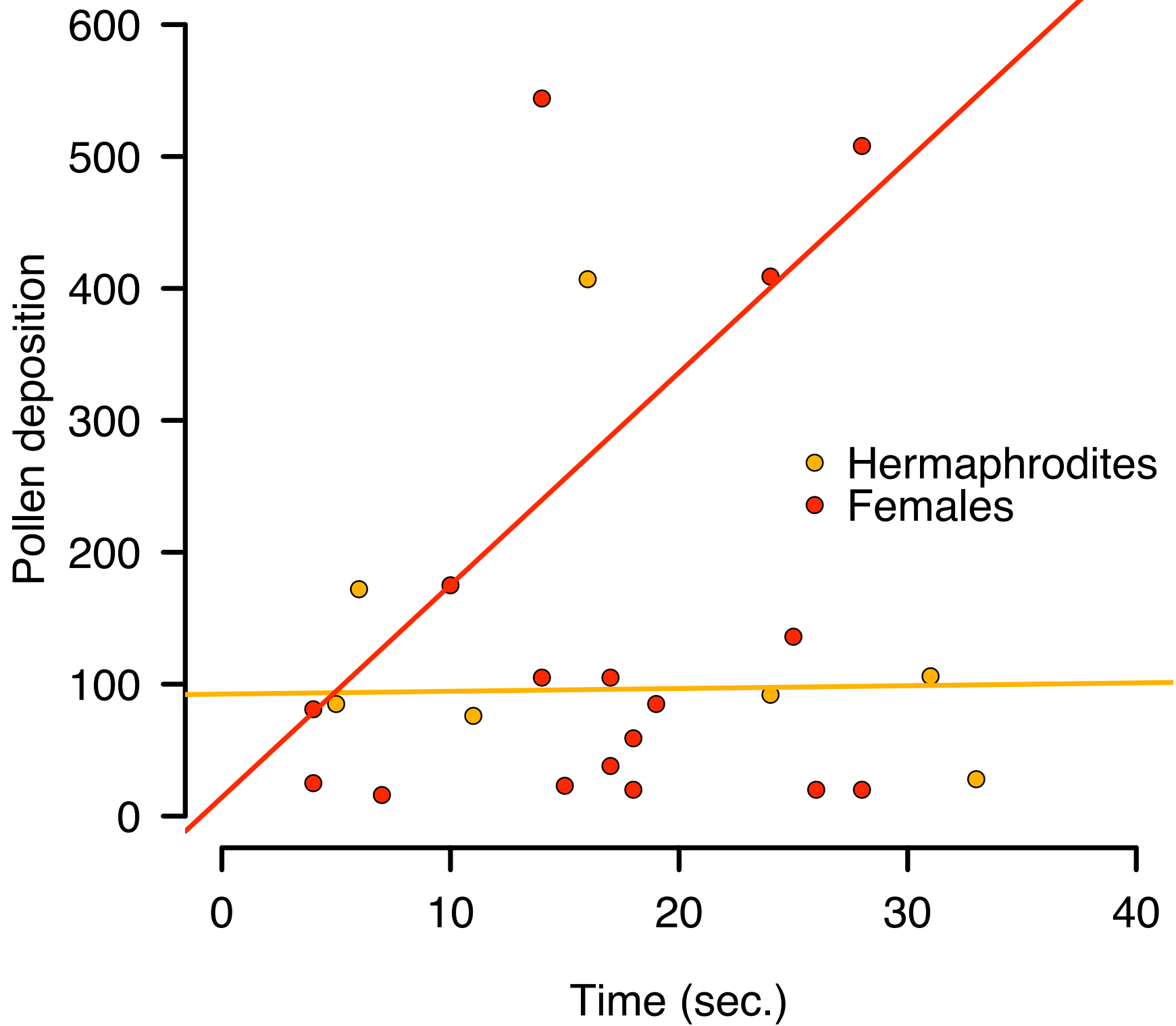
- Vast majority of pollen not involved in fertilization
- Gain curves link allocation to fitness
- Male gain curve is decelerating
- Competition doesn't favour increased allocation
- Gamete perspective leads to new questions

Sexual interference



Interference design





Sexual interference

- Simultaneous presentation of gender functions can impede fitness
- Male function interferes with female
- Gamete perspective is the appropriate way to measure interference in hermaphrodites

Gamete strategies

- Solved two great mysteries of plant reproduction
- Generated new questions about allocation to male function
- Investigated interference between male & female function