Mate choice

Mate choice

Males
less so

Females generally
more discriminating

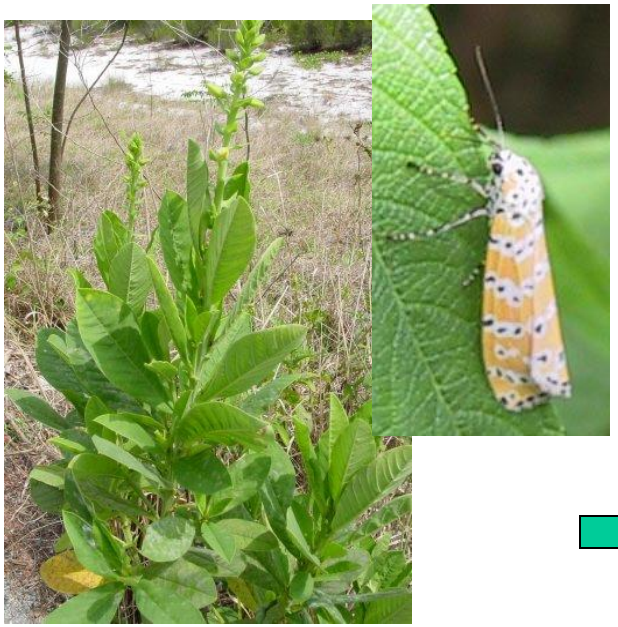
On what basis are
mates chosen?

Direct benefits

Indirect benefits

Direct benefits: protection

Newly protected female moth being rejected by spider



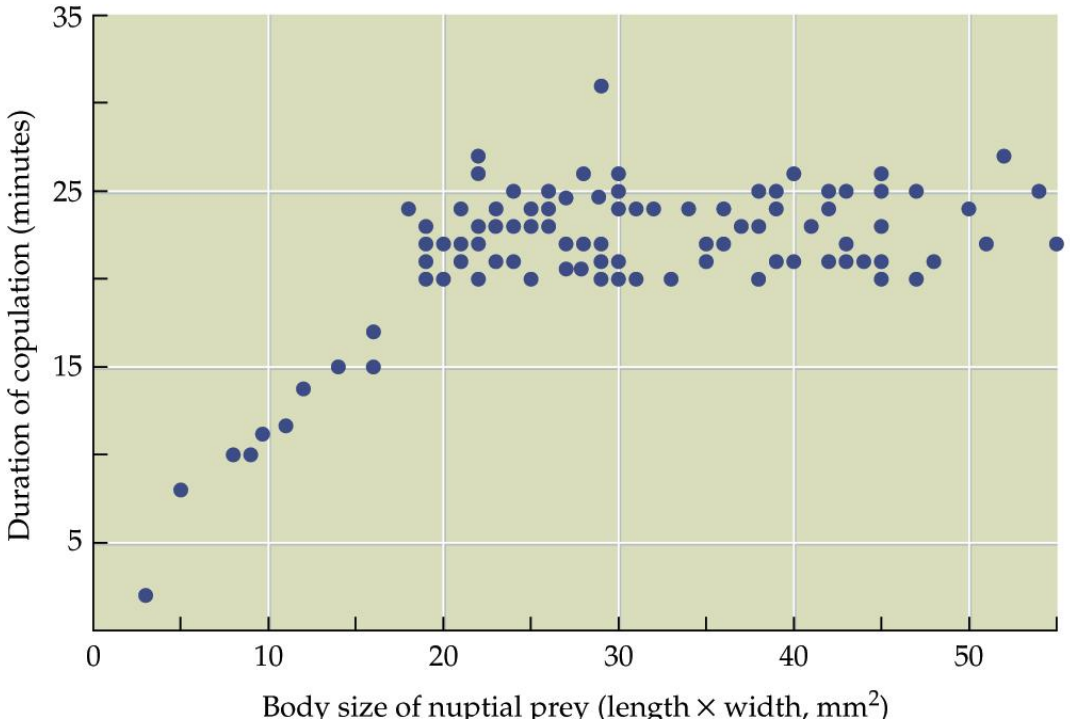
Rattlebox moth feeding off rattlebox plant, obtaining alkaloids

Male moth transfers alkaloids to female

Direct benefits: food

hanging-fly

Increase duration of courtship

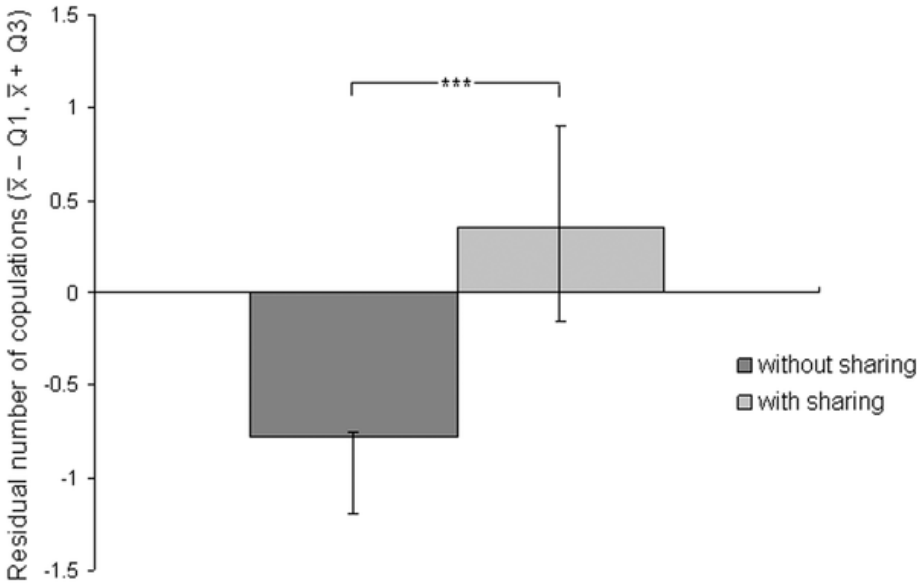


Female dance flies trick males into giving up nuptial gifts

Direct benefits: food

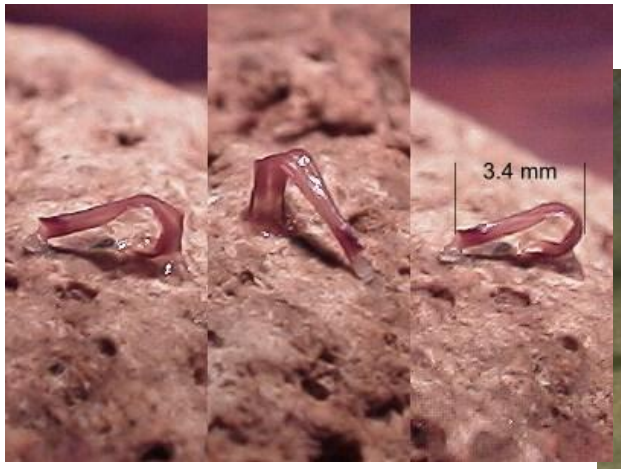
Chimpanzees sometimes hunt for meat

“Meat for sex” hypothesis



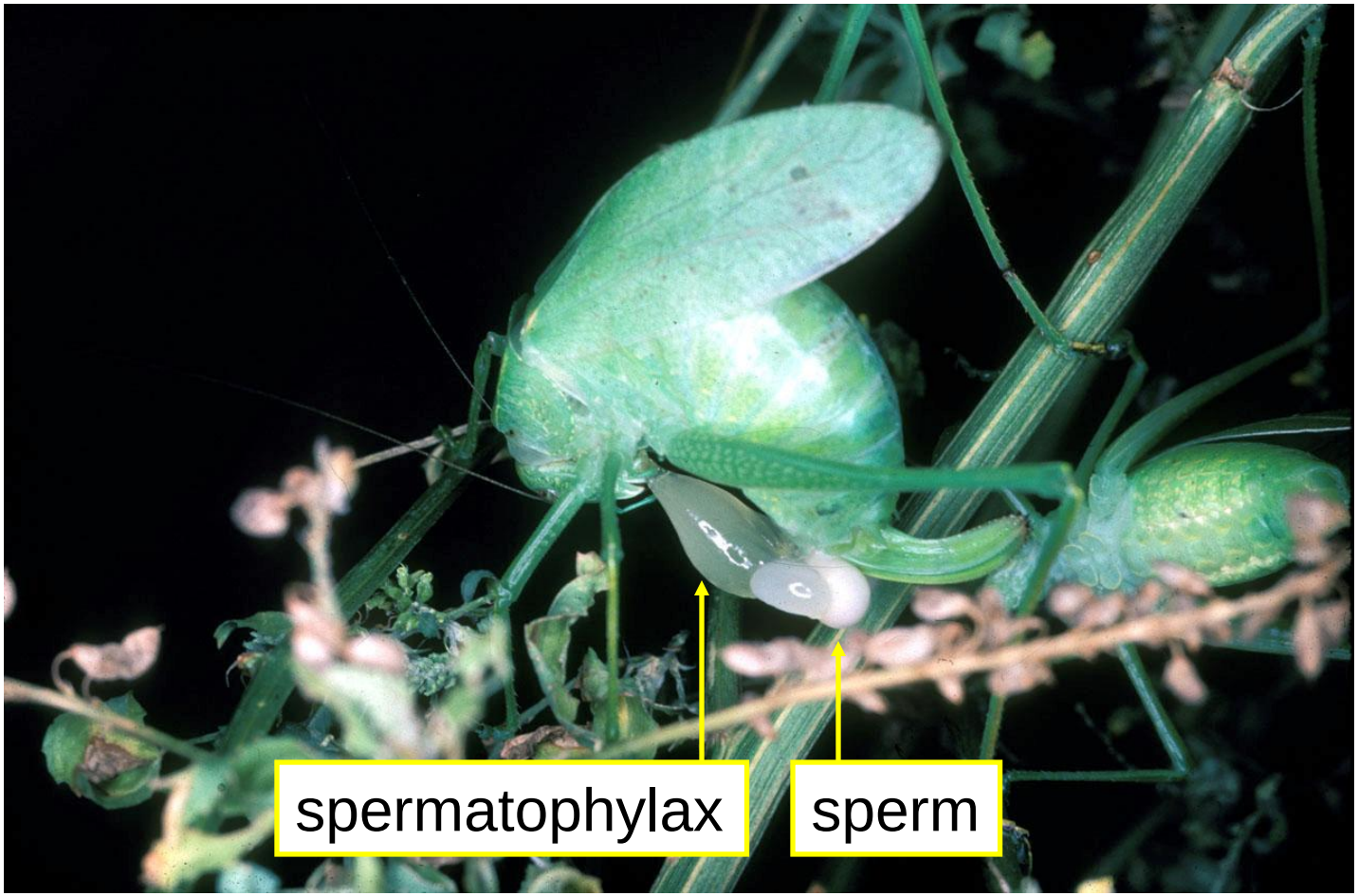
Direct benefits: spermatophores

Some attached to females



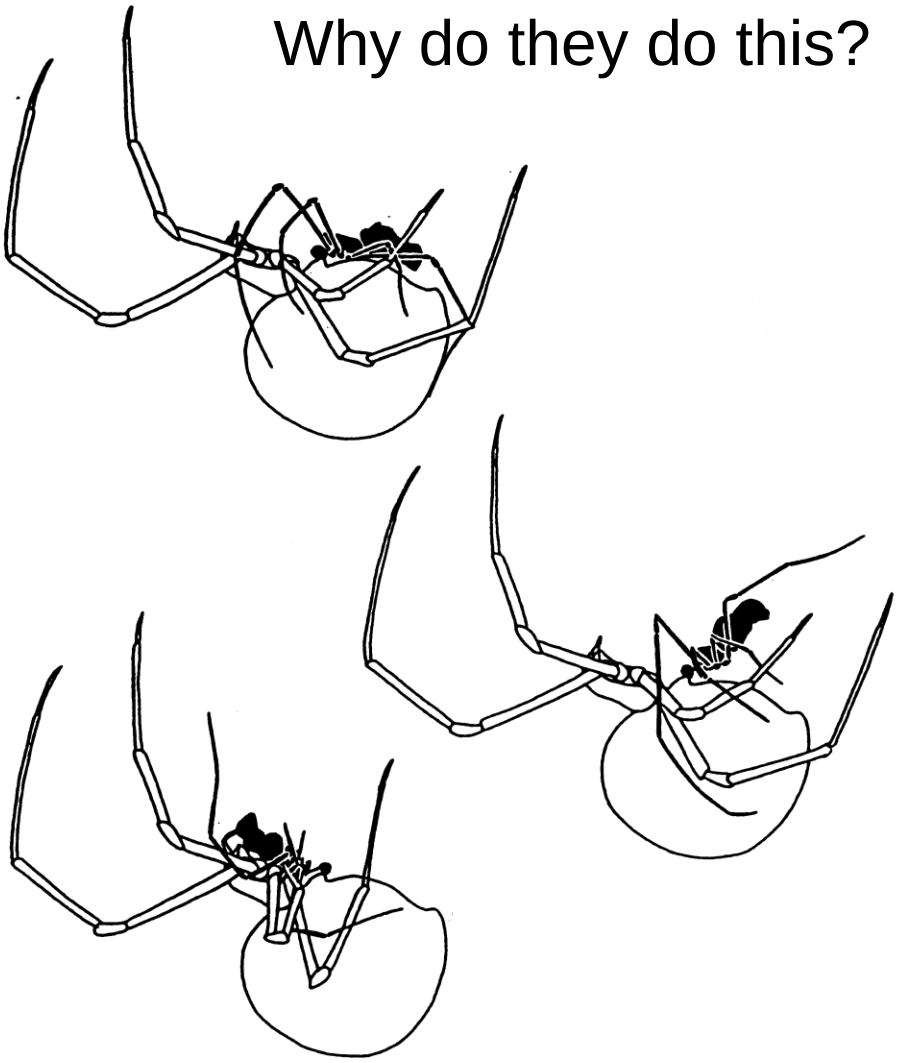
Some deposited on substrate

Direct benefits: spermatophores



Direct benefits: sexual cannibalism

Why do they do this?



Mycoplasma conjunctivitis

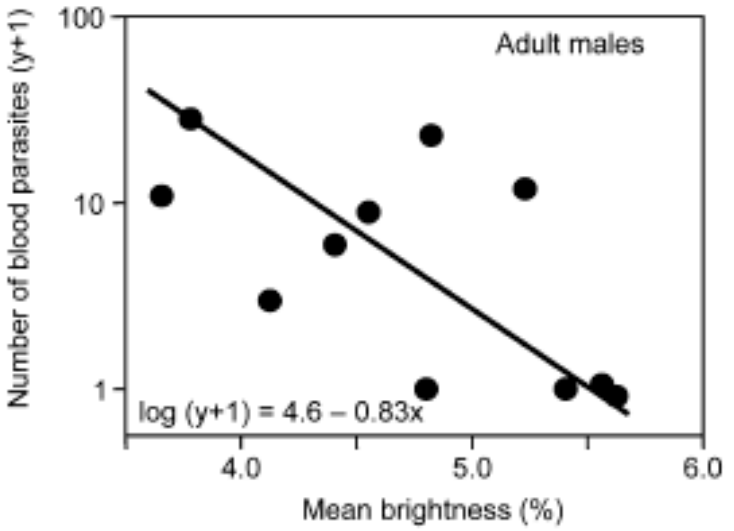
Hamilton and Zuk: females should mate with males with traits that predict parasite/pathogen resistance

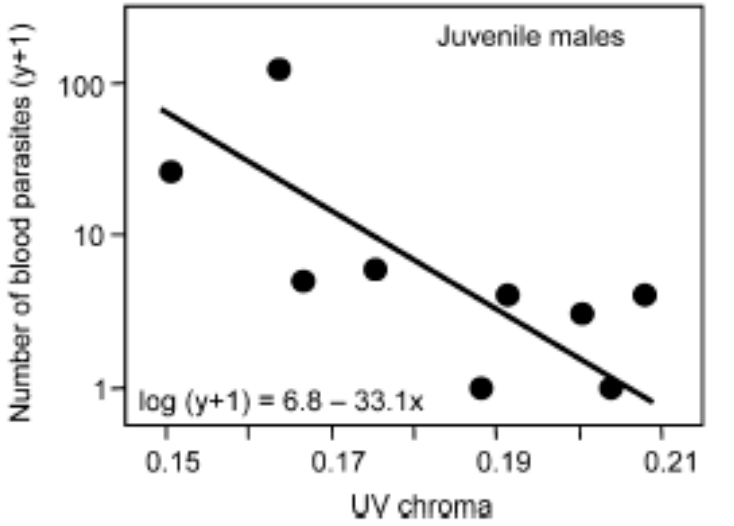
Marlene Zuk
Bill Hamilton

Plumage redness is inversely related *Mycoplasma* bacterial infection in house finches

Direct and indirect benefits: parasites avoidance

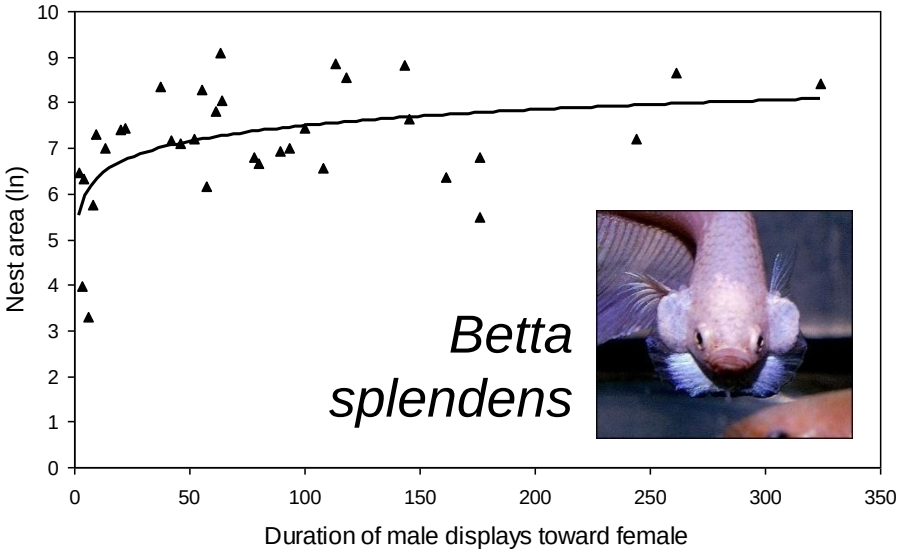
Satin bowerbird coloration is honest indicator of parasite load

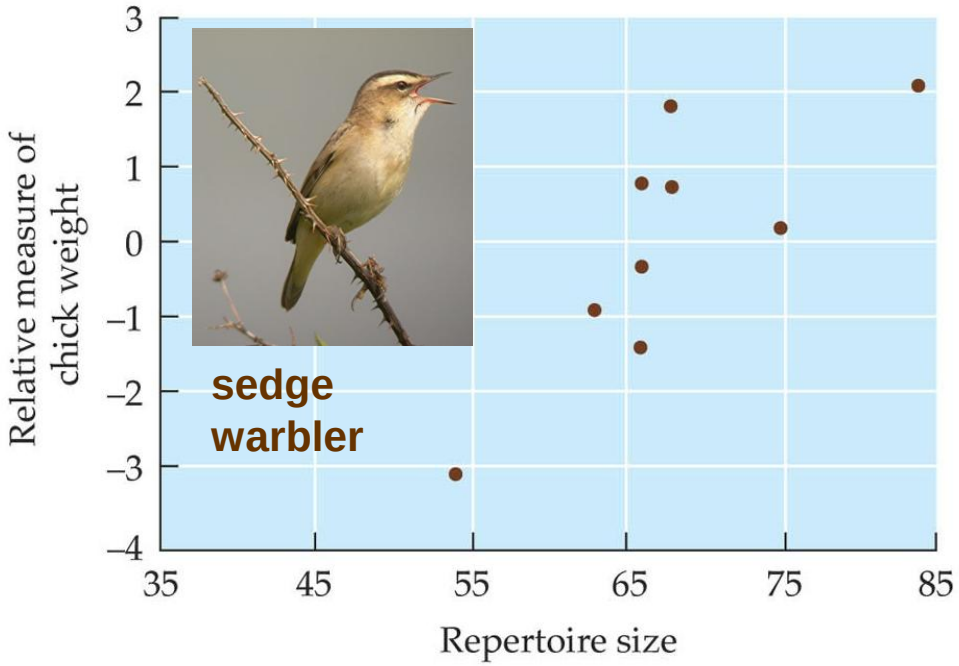




Direct and indirect benefits: parasites avoidance

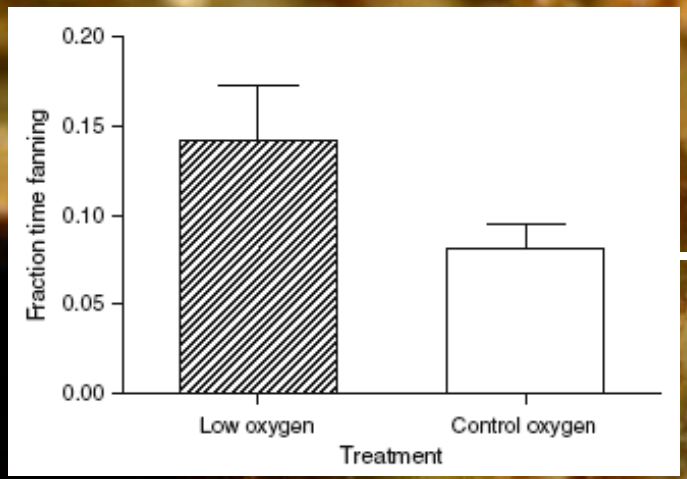
- Males sometimes responsible for nest construction, parental care
- Female choice based on benefits to offspring





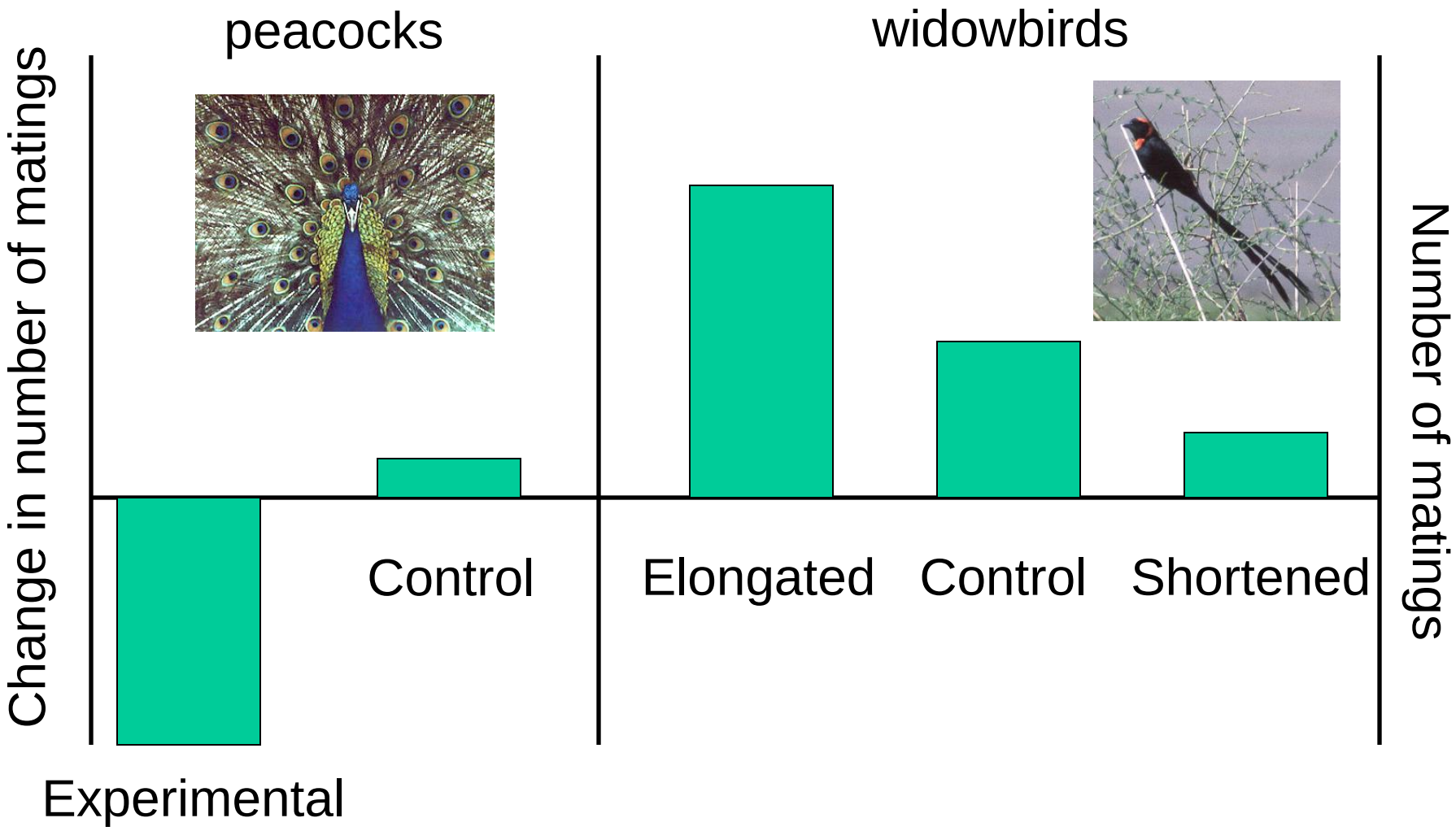
Females prefer caring males

Sand goby



16 of 22 females chose “low oxygen” male

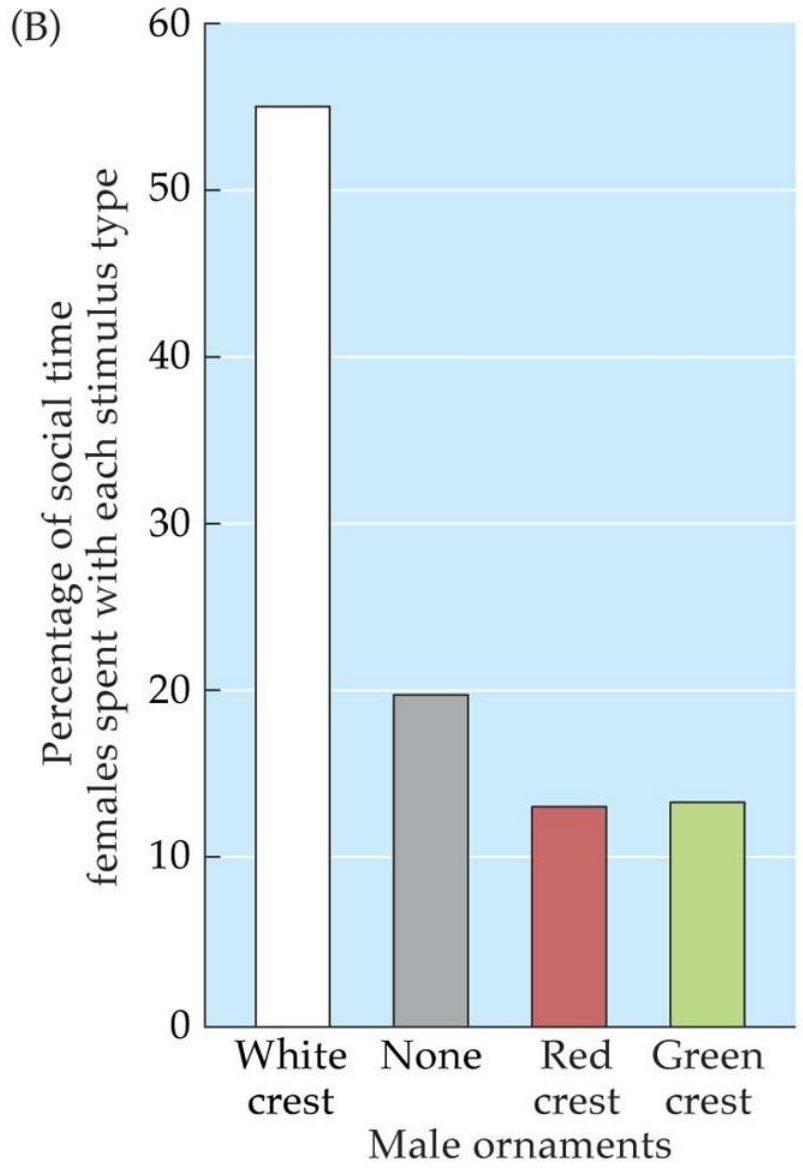
Preference for extreme traits



Preference for extreme traits

Preference exists
even if trait is novel

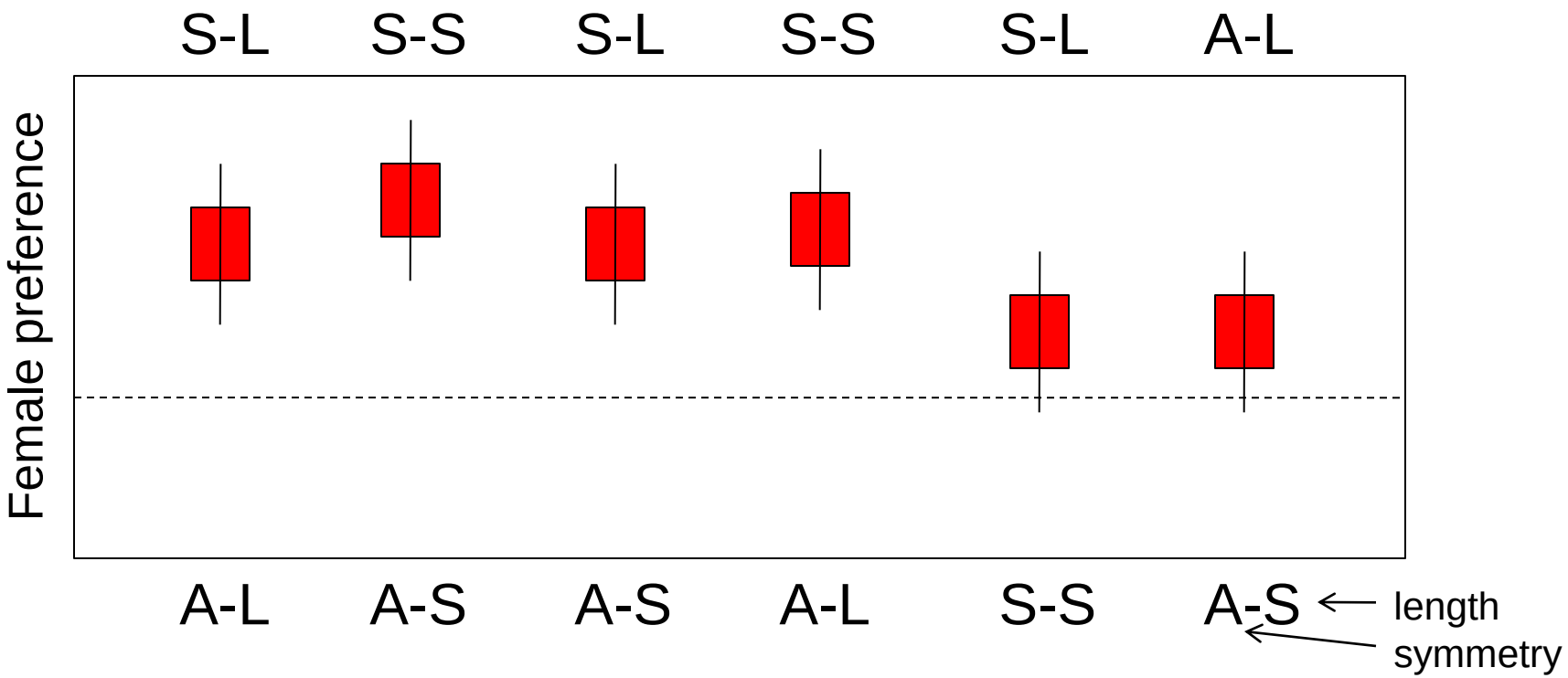
black-throated and zebra finches

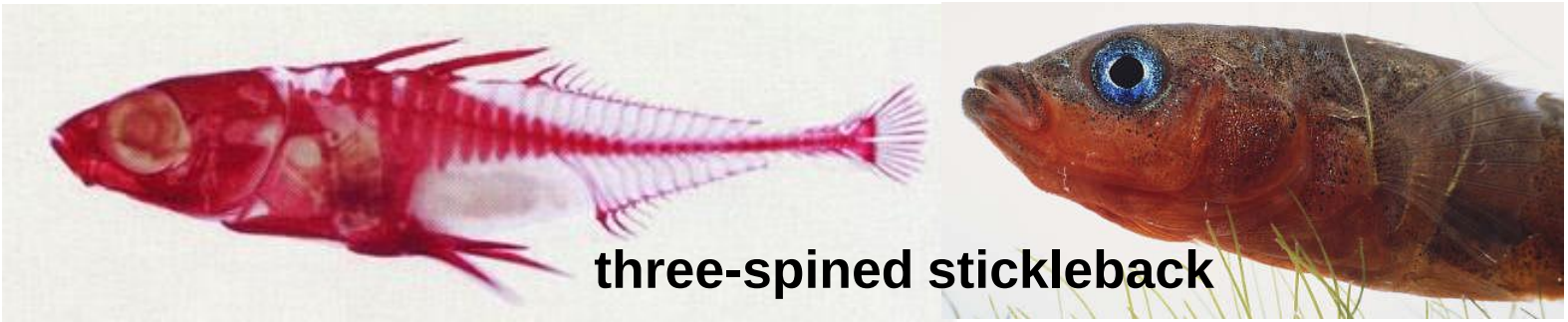


Preference for symmetrical traits

Fluctuating asymmetry = chance differences in paired structures

Preference for symmetrical traits





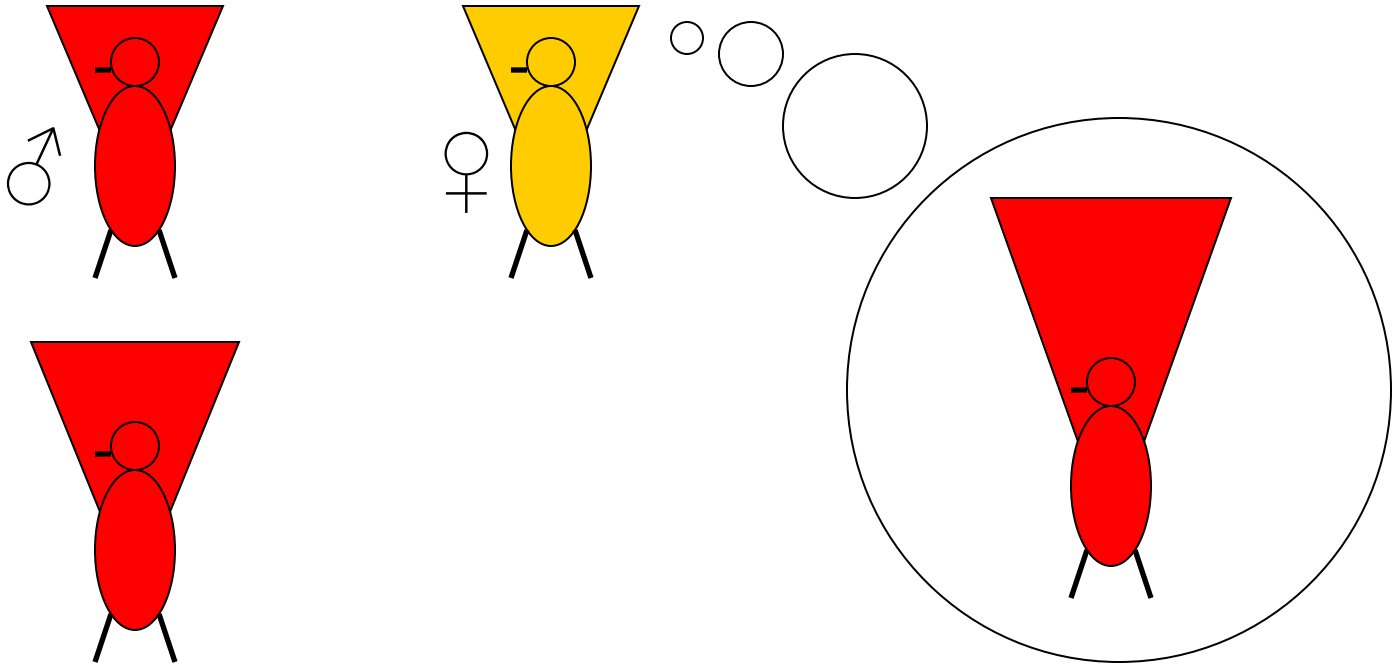
Conclusion? Symmetry more important than size

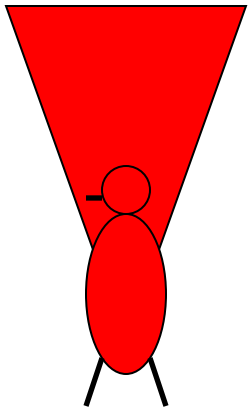
Indirect benefits: good genes

Why choose extreme or symmetrical traits?

Good genes hypothesis

Indirect benefits: Fisherian (“runaway”) selection





←Trait unrelated to male quality

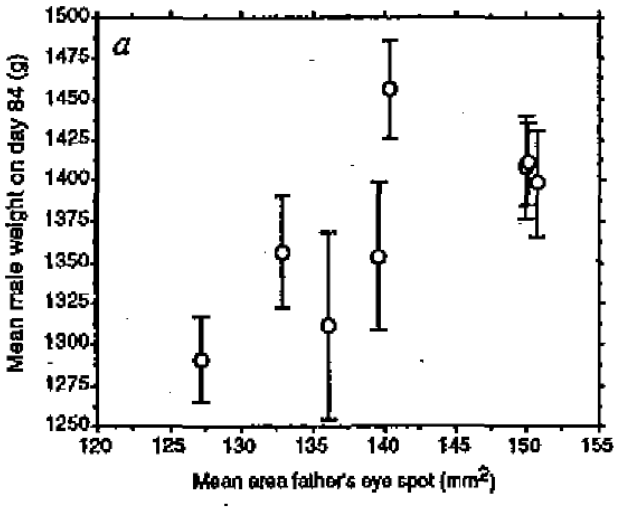
Trait passed to sons,
preference for daughters

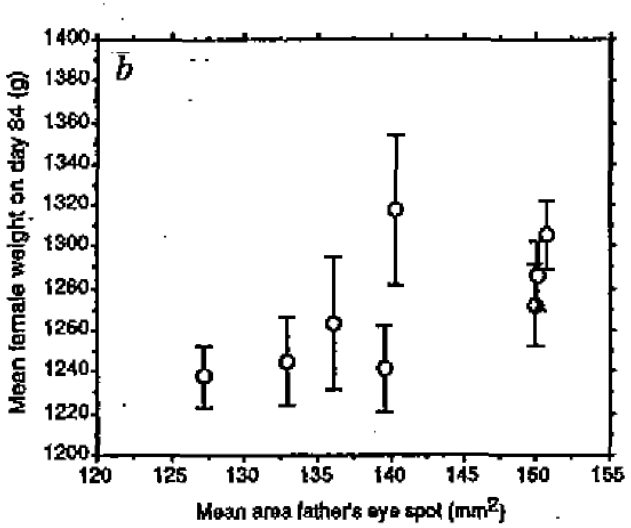
Related idea: “sexy son” hypothesis

R.A. Fisher

Good genes vs. Fisherian selection

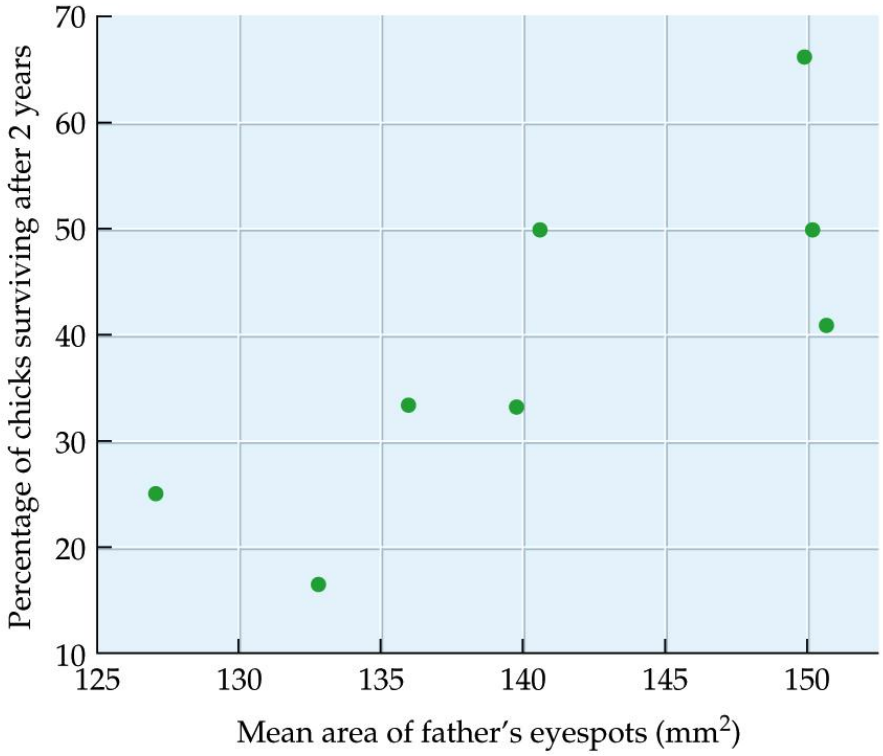
Hypotheses not mutually exclusive

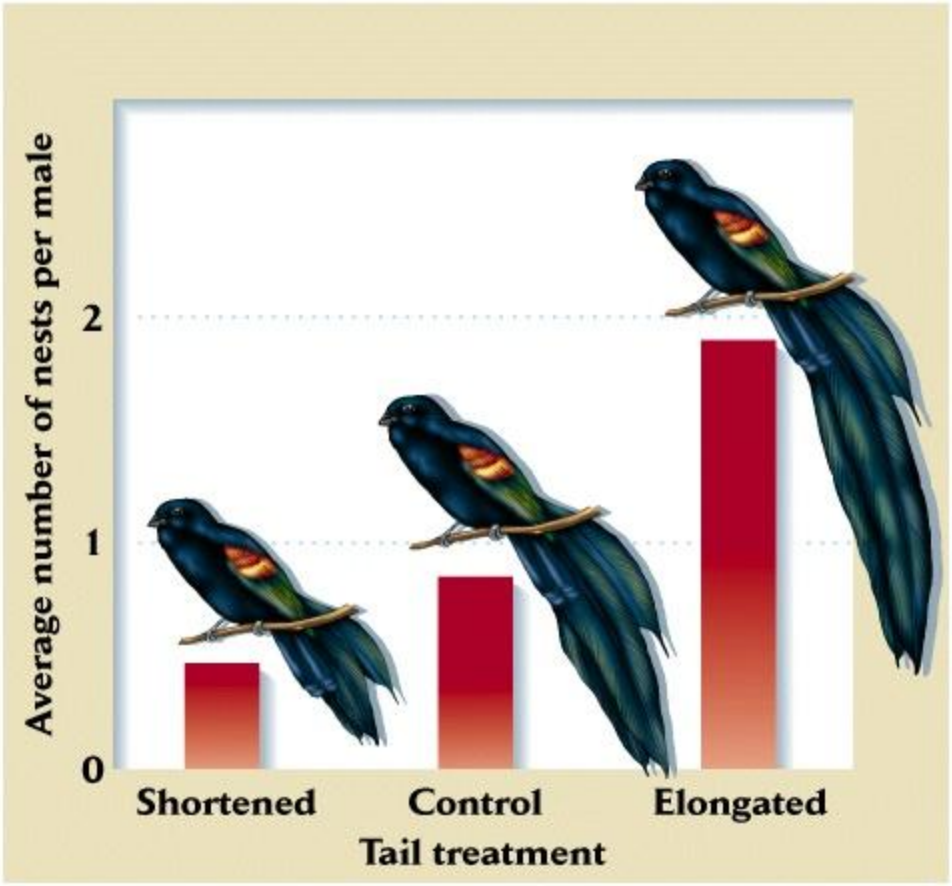




Good genes (and Fisherian selection?)
in population of peacocks

Good genes vs. Fisherian selection



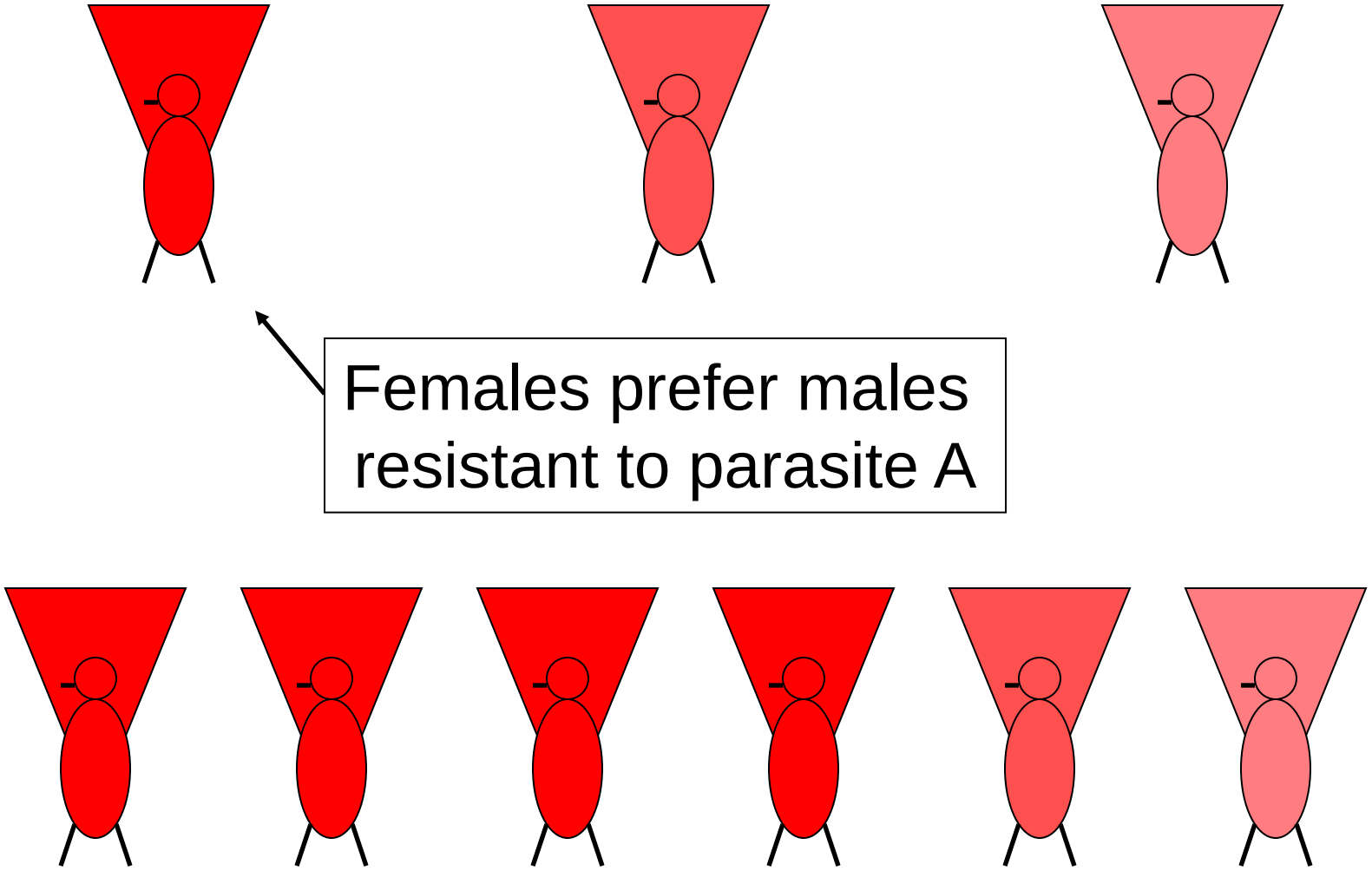


aa Aa AA

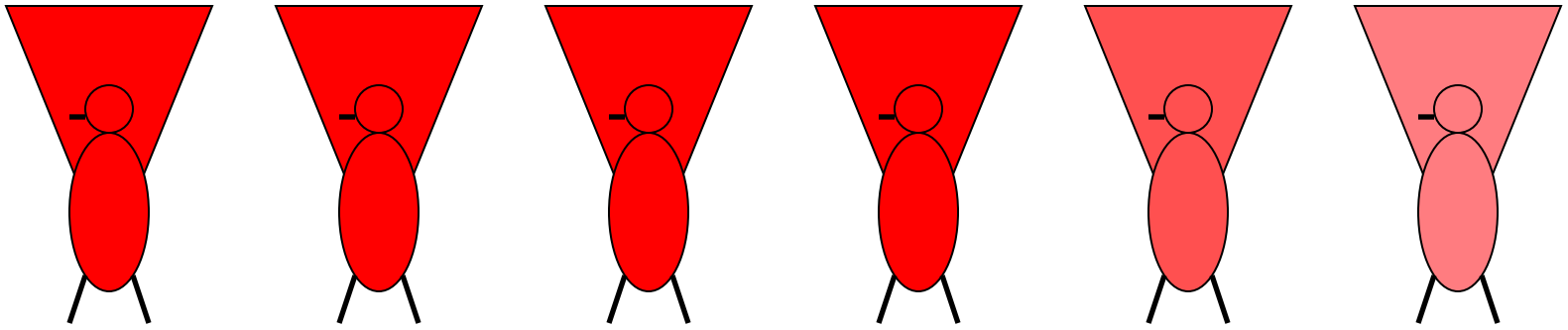
If preferred trait is genetic,
runs quickly to fixation

How do you explain natural variation in trait?

Hamilton-Zuk hypothesis



Hamilton-Zuk hypothesis



Population vulnerable to invasion by parasite B
Females now prefer males resistant to B