



The University of Texas at Austin
Environmental Science Institute

Hot Science - Cool Talk # 116

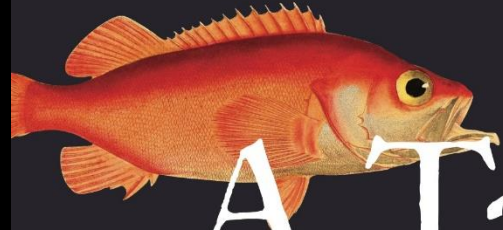
A Taste for the Beautiful

Dr. Michael J. Ryan
November 30, 2018

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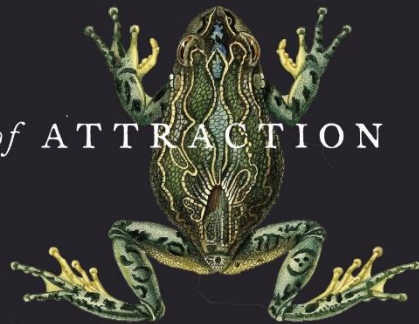


MICHAEL J. RYAN



A Taste *for the* Beautiful

The EVOLUTION *of* ATTRACTION





MICHAEL J. RYAN



El gusto

por la

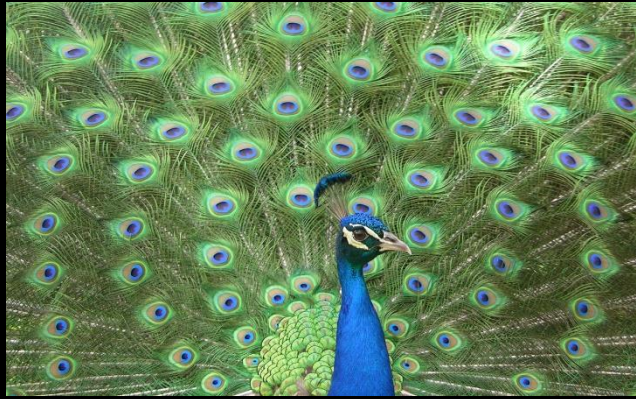
belleza

BIOLOGÍA *de la* ATRACCIÓN



Outline

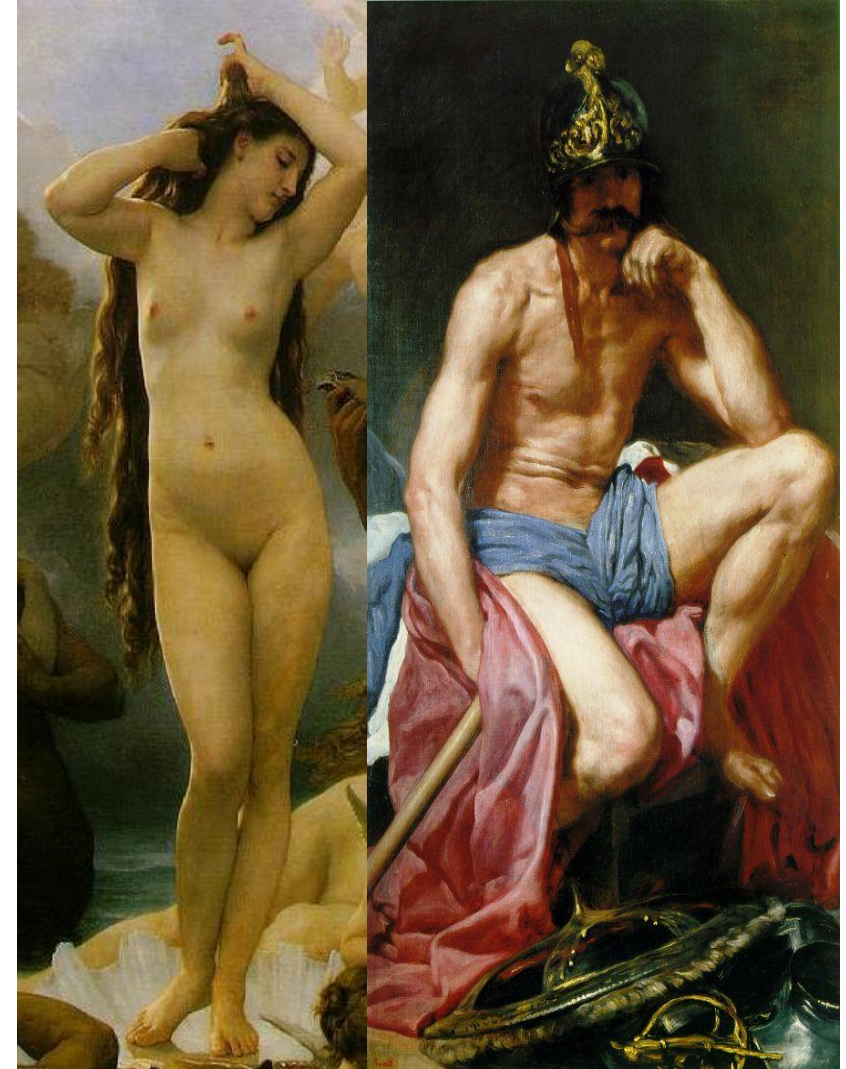
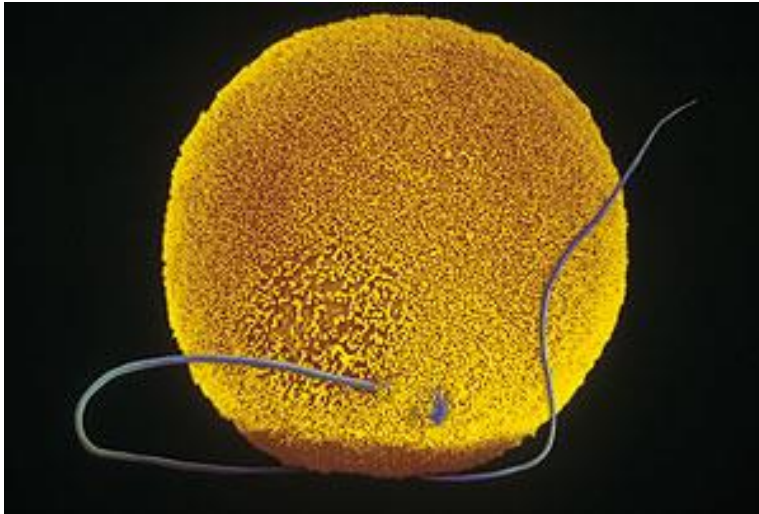
- How can animals evolve traits that cause them to die sooner?
- Why is it that typically males have to compete for the attention of females to mate?
- What is it about these fancy and sometimes deadly male courtship traits that make them so attractive to females?
- In what ways are animals and humans similar in their approach to the mating game?



Why does gamete size matter?



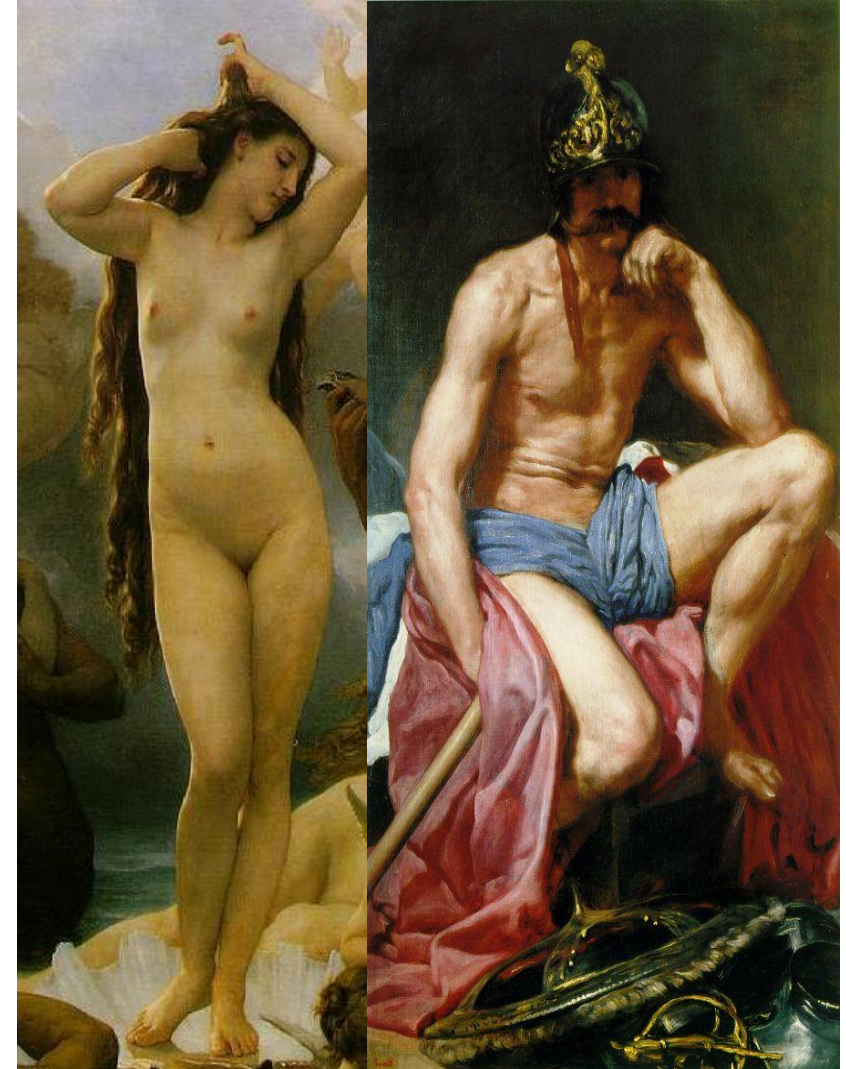
Why does gamete size matter?



Venus by Bouguereau & Mars by Velázquez

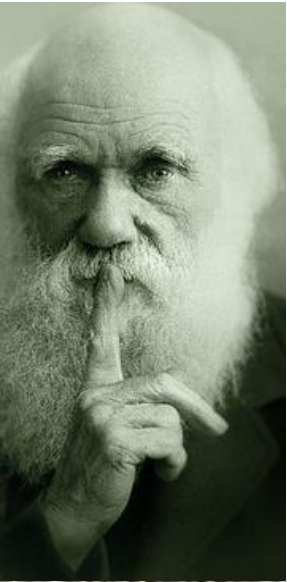
Why does gamete size matter?

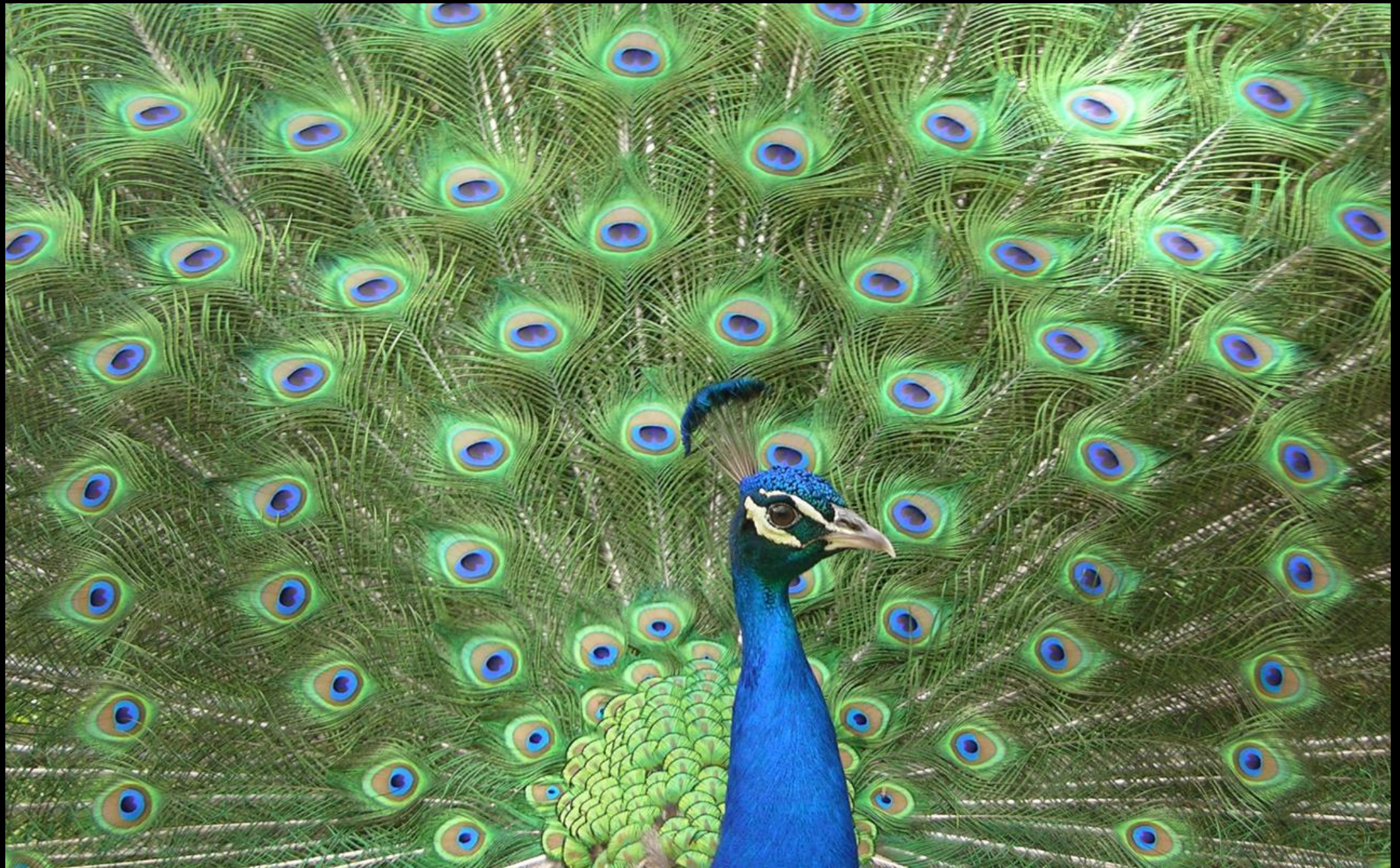
*Typically, males compete for females,
females choose males.*



Venus by Bouguereau & Mars by Velázquez

Every time I gaze at a feather in the peacock's tail it makes me sick,
Charles Darwin, 1860





Beauty kills

Beauty kills



Beauty kills





(Tuttle & Ryan, 1981, Science)



© Ryan C. Taylor



Beauty is in the eye of the beholder

Beauty is in the brain of the beholder



Who sees the human face correctly: the
photographer, the mirror, or the painter?

(Pablo Picasso)

izquotes.com



Beautiful Sights



<http://www.youtube.com/watch?v=7dx2CUMtZ-0>

*Beauty is in the brain of the beholder . . .
but the brain has other things
on its mind besides sex.*



*Beauty is in the brain of the beholder . . .
but the brain has other things
on its mind besides sex.*



Female prefer males
with more orange

Food & Sex



Female and males
prefer orange fruit



Food for deception



(Amcoff et al., 2013, Anim. Behav.)

Supernormal Stimulus





Supermodels as
Supernormal stimuli?





Supermodels as Supernormal stimuli?

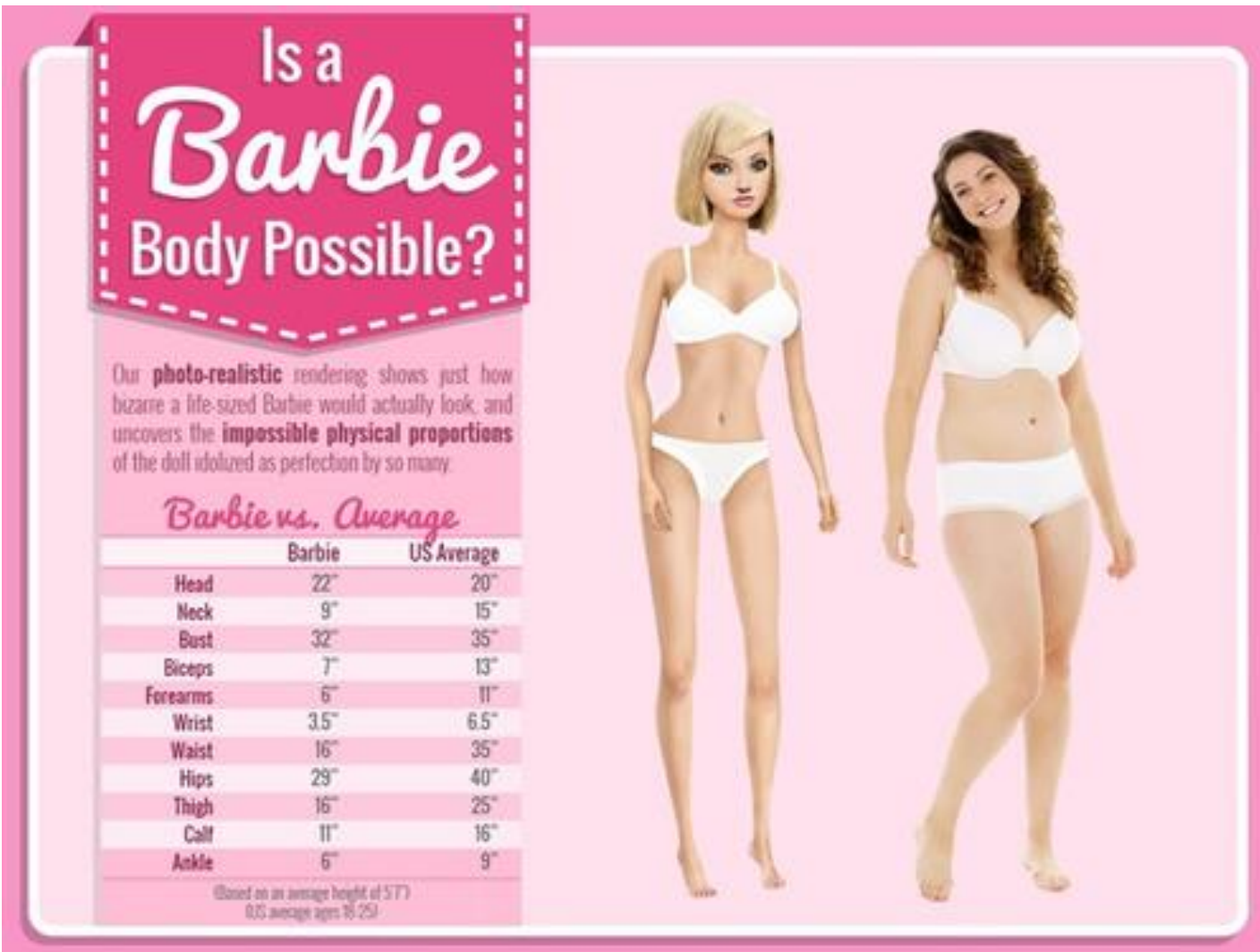
Gisele Bündchen
Height- 5'11"
Weight- 125 lbs

Let's make a supernormal stimulus for our own species

Let's make a supernormal stimulus for our own species

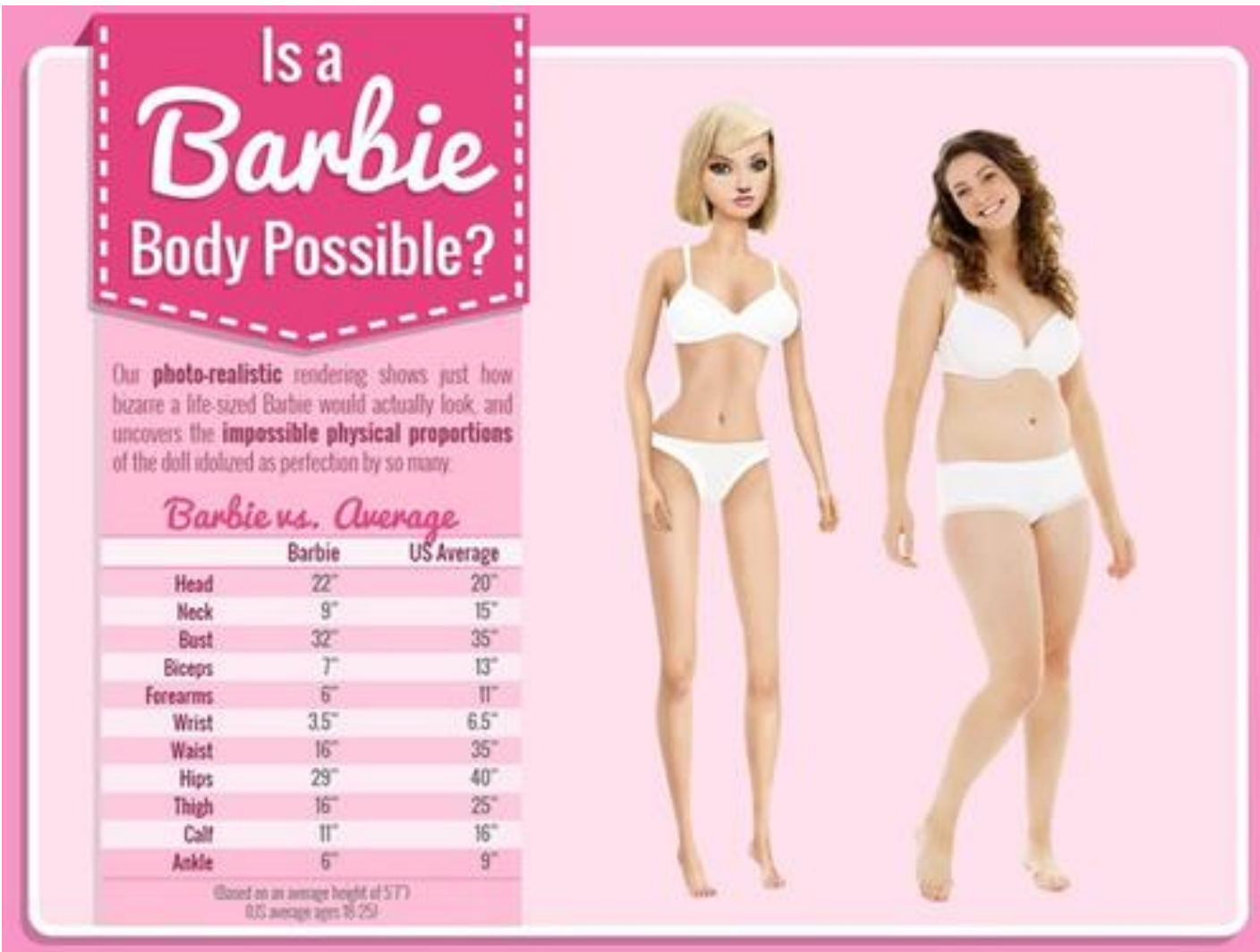


Let's make a supernormal stimulus for our own species



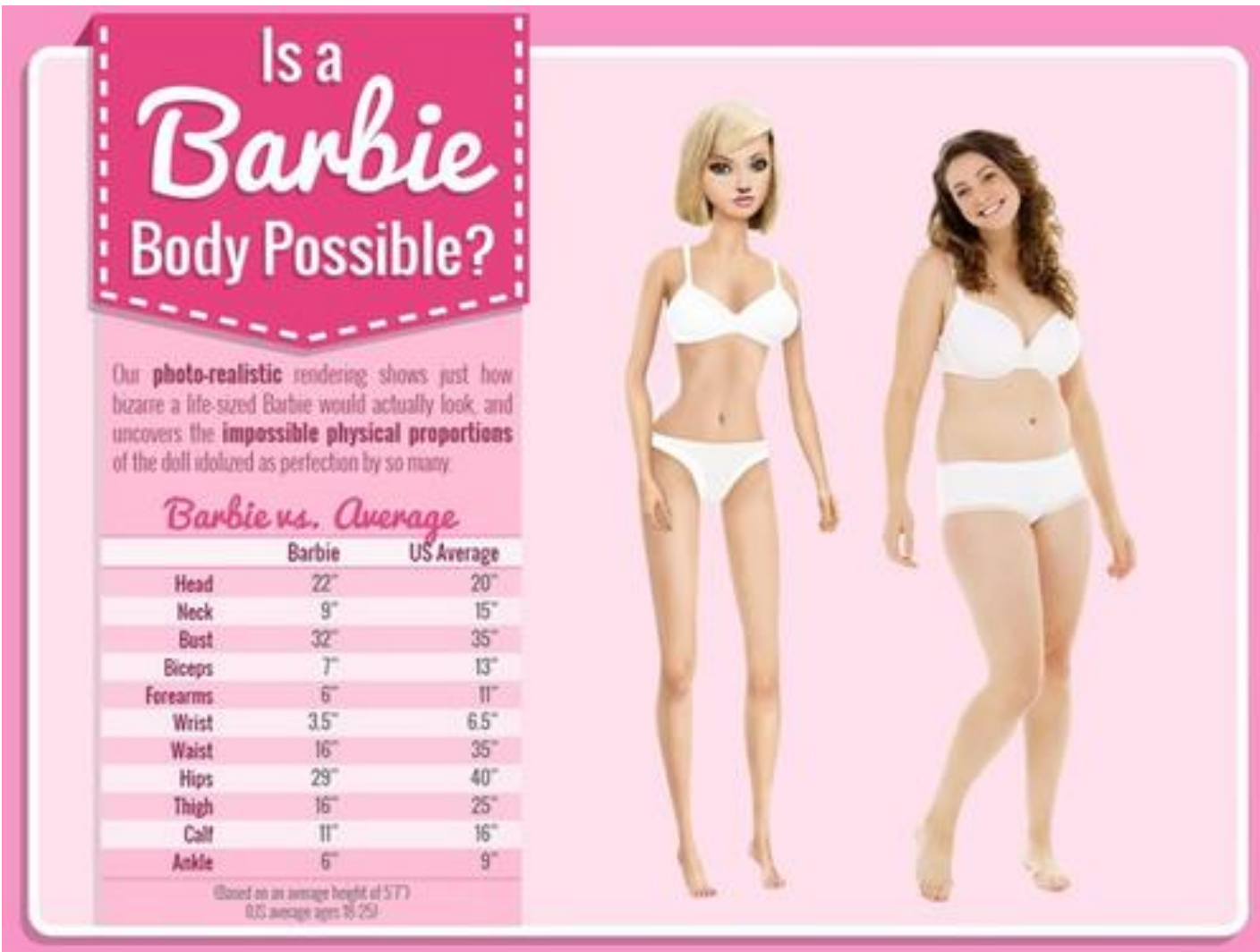
Let's make a supernormal stimulus for our own species

- Barbie's neck, wrists, forearms, ankles—and especially her thighs—are like match sticks.



Let's make a supernormal stimulus for our own species

- Barbie's neck, wrists, forearms, ankles—and especially her thighs—are like match sticks.
- With her super-thin and extra-long neck, she wouldn't be able to raise her head.



Let's make a supernormal stimulus for our own species



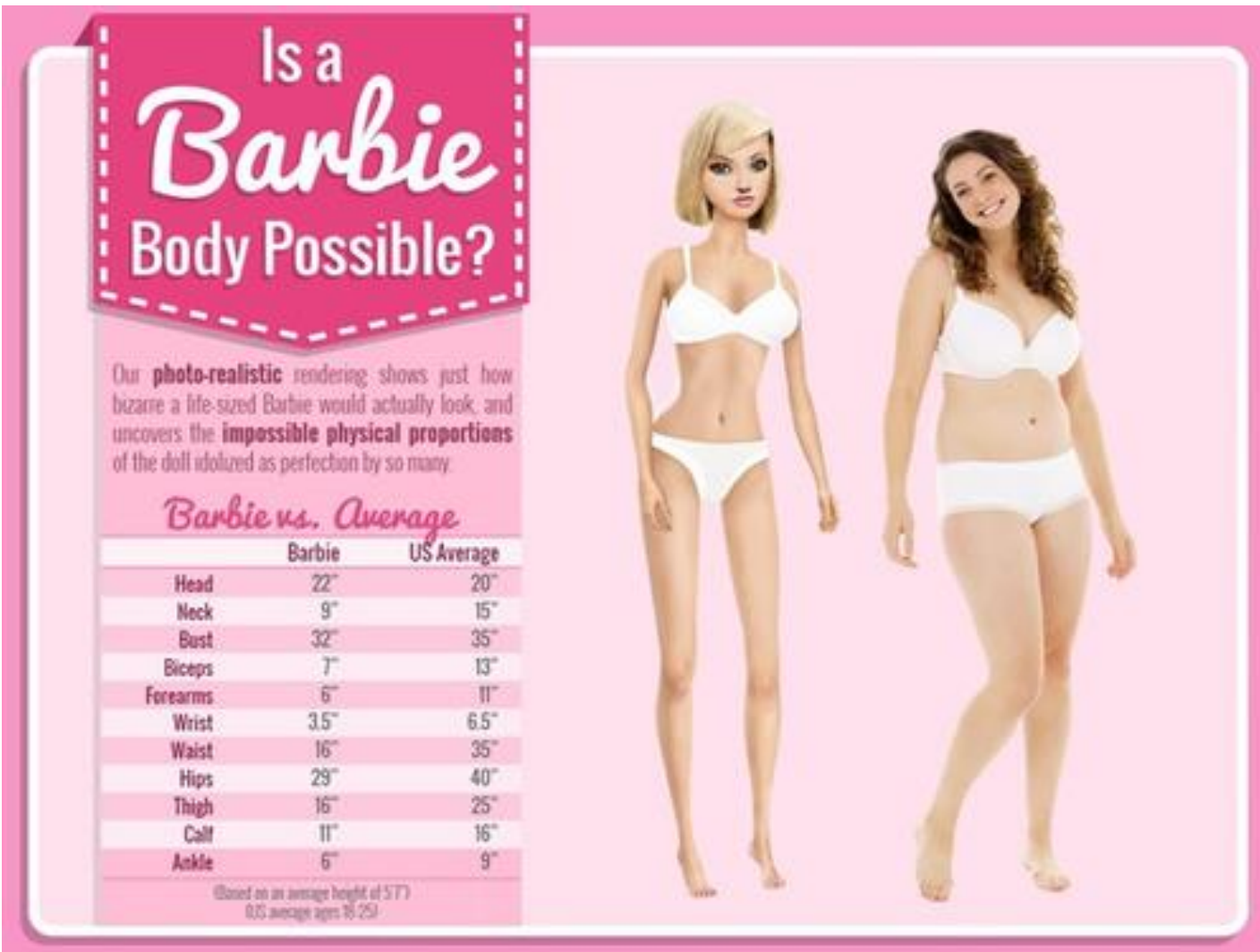
- Barbie's neck, wrists, forearms, ankles—and especially her thighs—are like match sticks.
- With her super-thin and extra-long neck, she wouldn't be able to raise her head.
- Her tiny waist would limit her to half a liver and only a few inches of intestine.

Let's make a supernormal stimulus for our own species



- Barbie's neck, wrists, forearms, ankles—and especially her thighs—are like match sticks.
- With her super-thin and extra-long neck, she wouldn't be able to raise her head.
- Her tiny waist would limit her to half a liver and only a few inches of intestine.
- With her tiny feet, thin ankles, and top-heavy form she would have to walk on all fours.

Let's make a supernormal stimulus for our own species



- Barbie's neck, wrists, forearms, ankles—and especially her thighs—are like match sticks.
- With her super-thin and extra-long neck, she wouldn't be able to raise her head.
- Her tiny waist would limit her to half a liver and only a few inches of intestine.
- With her tiny feet, thin ankles, and top-heavy form she would have to walk on all fours.
- *Luckily*, she couldn't reproduce because a baby could not pass through her birth canal.

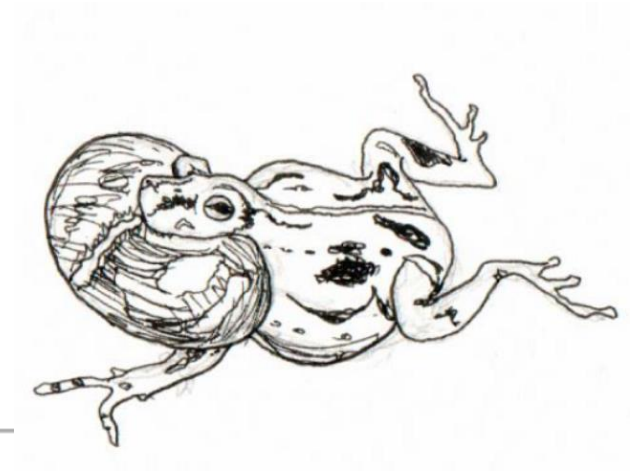
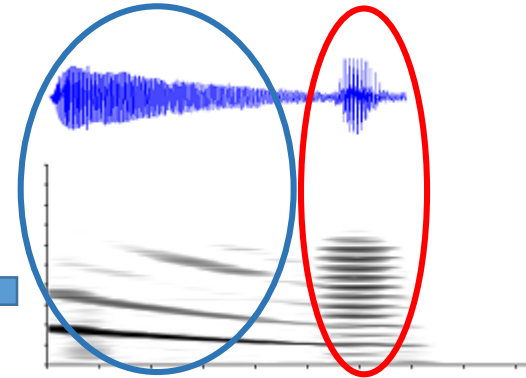
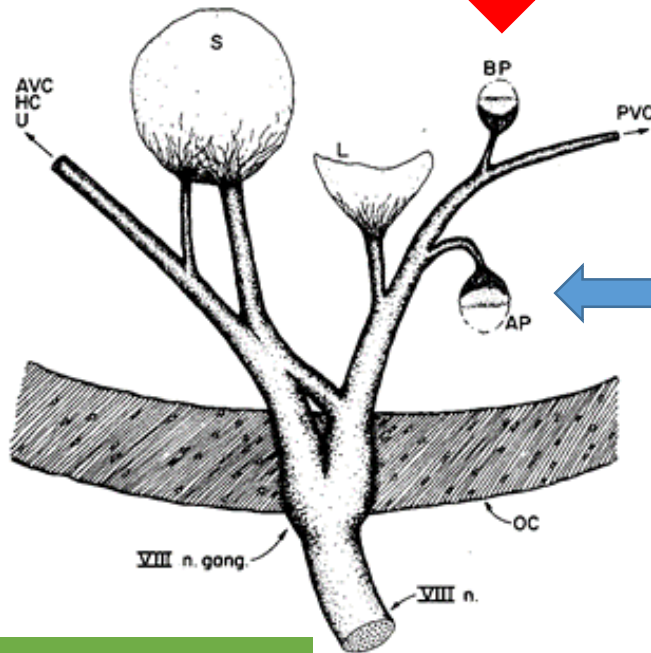


Naomi Wolf
*The Beauty
Myth, etc.*

(Wolf, 2016, New York)

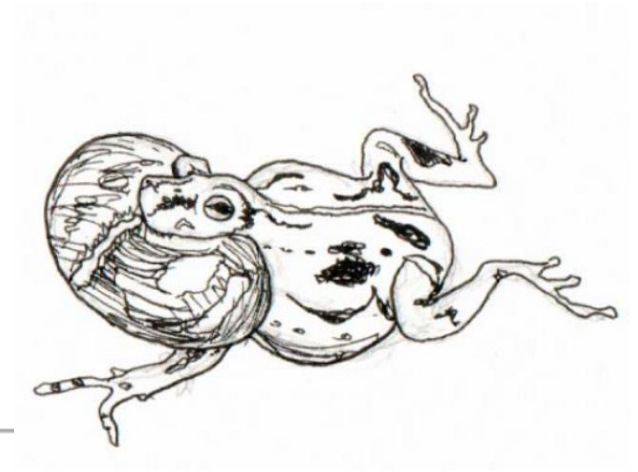
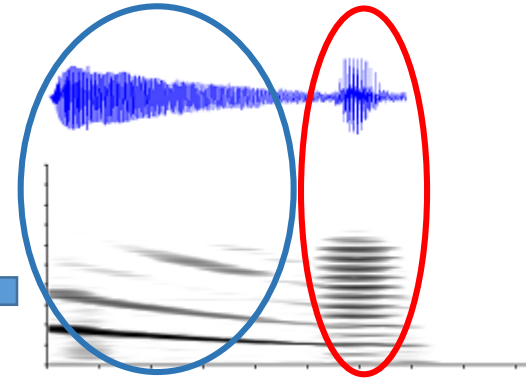
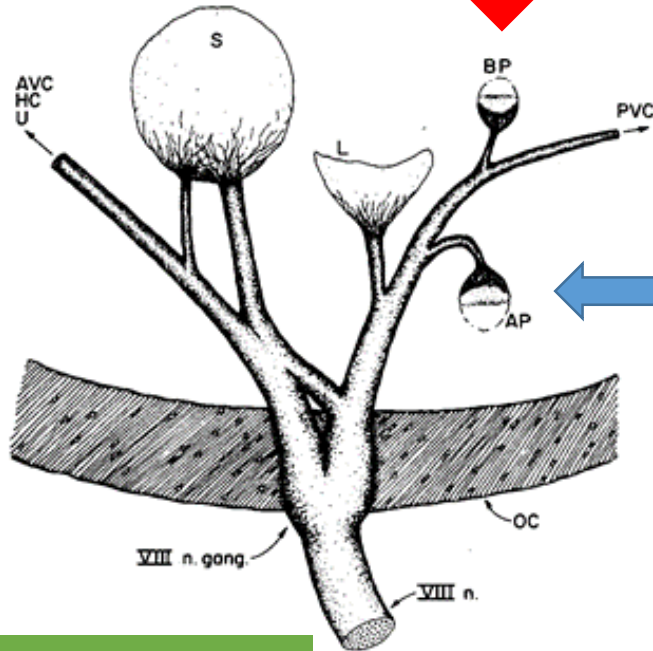
Beautiful Sounds

The diagram illustrates the central nervous system of a larva with various neurons labeled: Sep, Pm, Str, SC, A, VM, C, P, Tm, Tp, NLE, SON, DLN, and NLL. Three classes of neurons are highlighted: Class 1 (N VII and N VIII) in a circle on the right, Class 2 (SON and DLN) in a red and blue striped circle at the bottom, and Class 3 (Tm, Tp, NLE, and NLL) in a purple circle on the left. Arrows indicate the distribution and connectivity of these neurons, with a large curved arrow on the left labeled '4'.



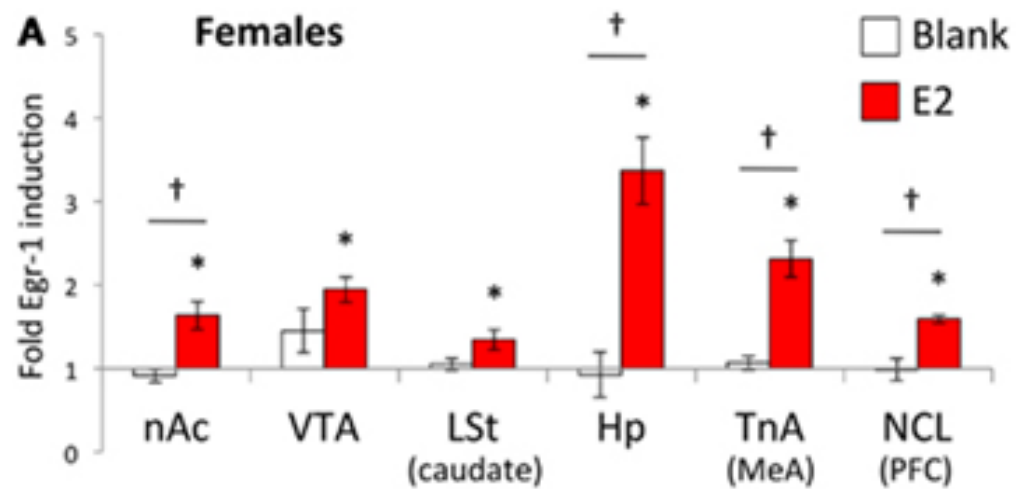
(Ryan et al., 1990, Nature)

Diagram illustrating the central nervous system (CNS) of a larva, showing the location of the NLL (Nervous Lateral Line) and its connections. The diagram includes labels for various brain regions: Str, Sep, Pm, SC, A, VM, C, P, Tl, Tm, Tp, NLL, SON, DLN, and a detailed view of the N VII and N VIII ganglia. A red arrow points from the NLL to the SON, and a red and blue striped arrow points from the SON to the DLN. A large curved arrow on the left indicates a feedback loop. The diagram is numbered 1, 2, 3, and 4.



Musician Wren



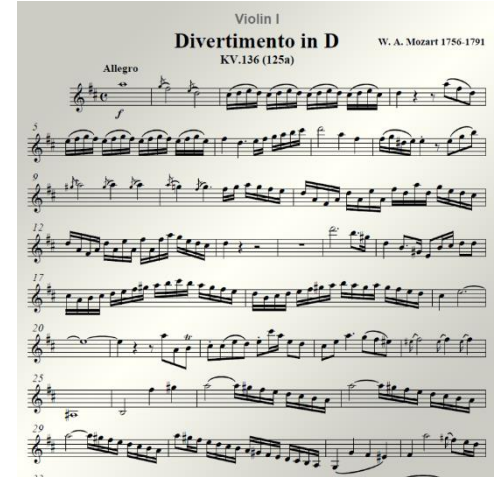


Musician Wren

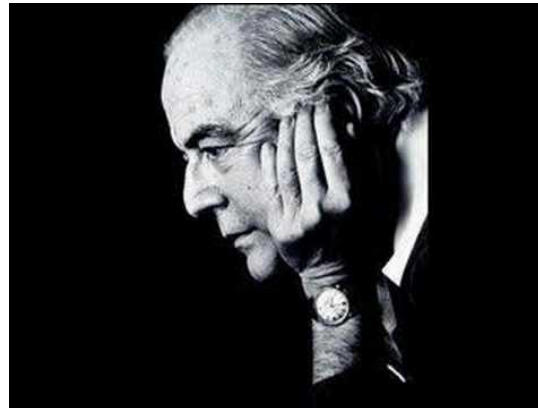


Music & romantic arousal in men

Mozart's *Eine Kleine Nachtmusik* and *Divertimento No. 136*

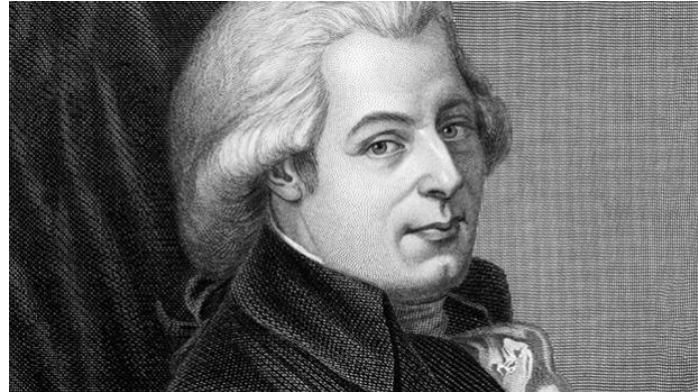


Barber's *Adagio pour Cordes*



(Mitchell et al., 1998, Arch. Sex. Behav.)

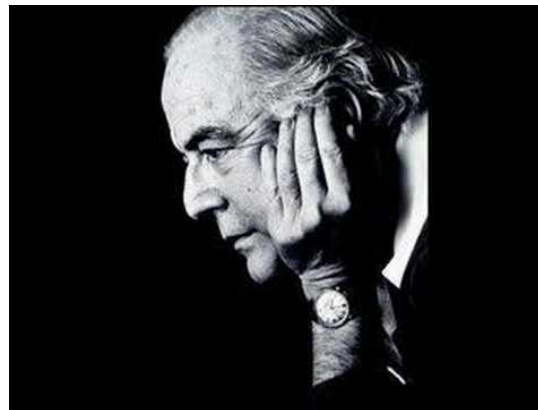
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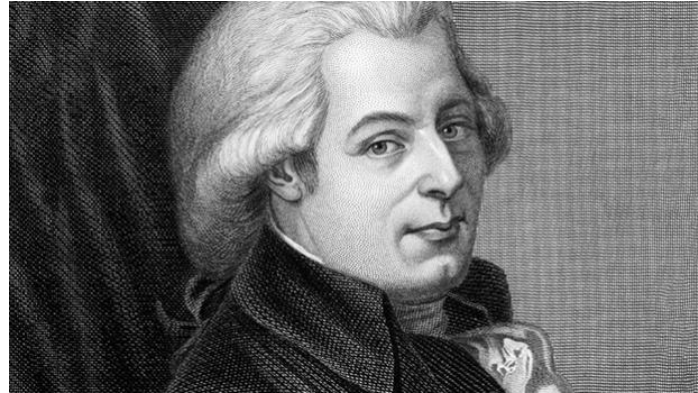
Barber's *Adagio pour Cordes*



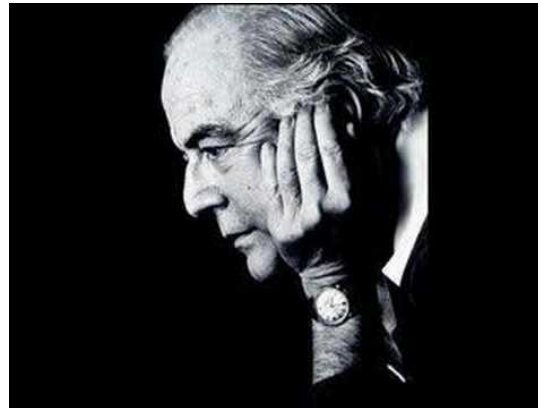
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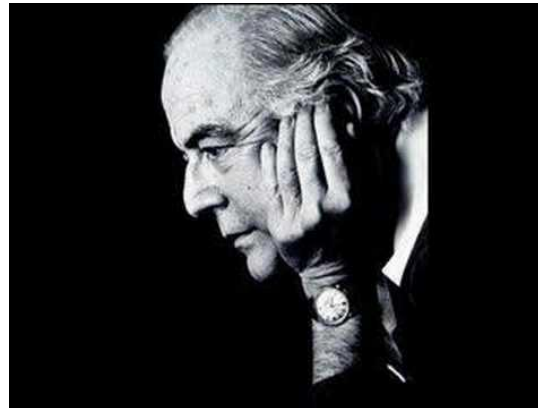


(Mitchell et al., 1998, Arch. Sex. Behav.)

Mozart's *Eine Kleine Nachtmusik* and *Divertimento No. 136*

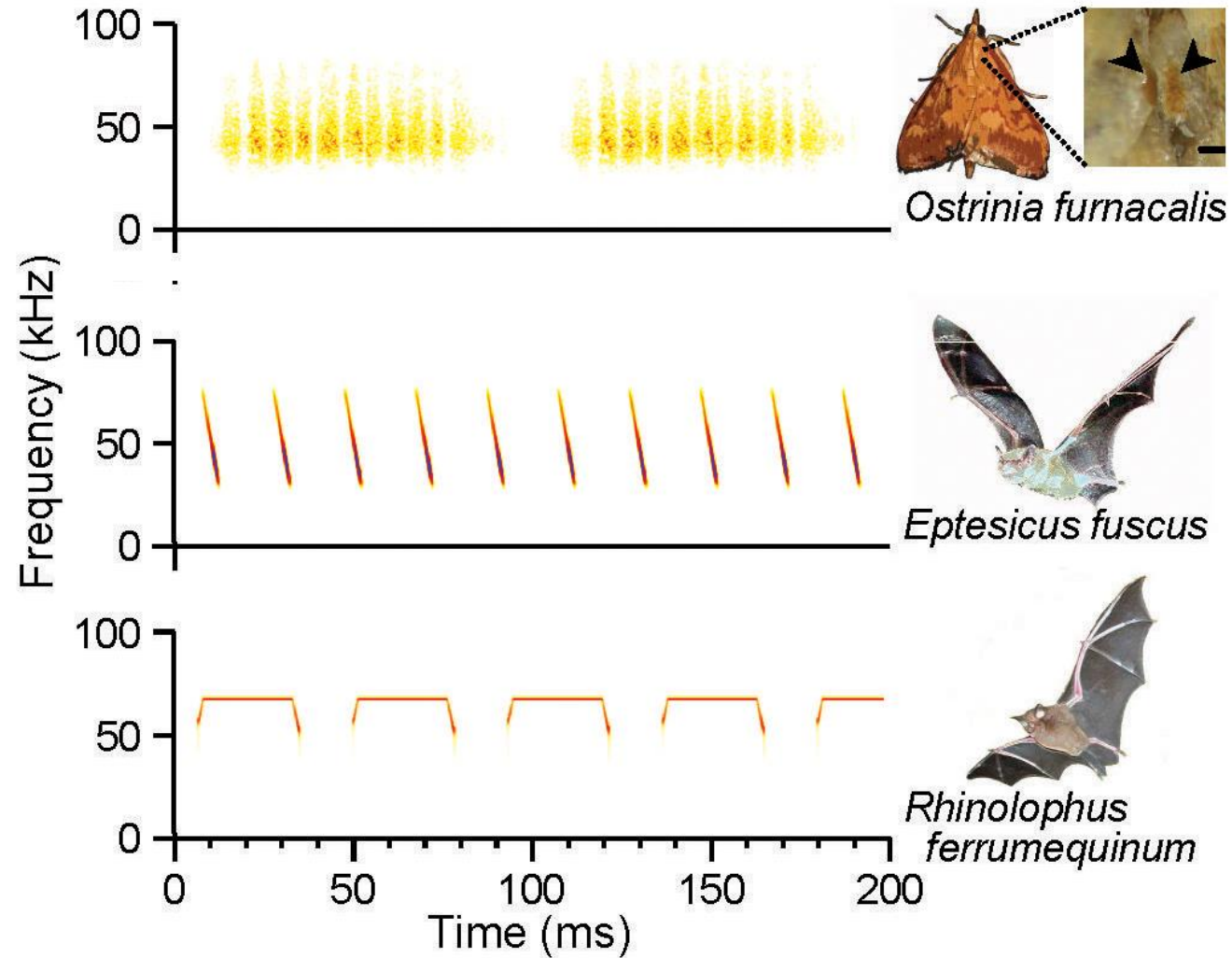


Barber's *Adagio pour Cordes*



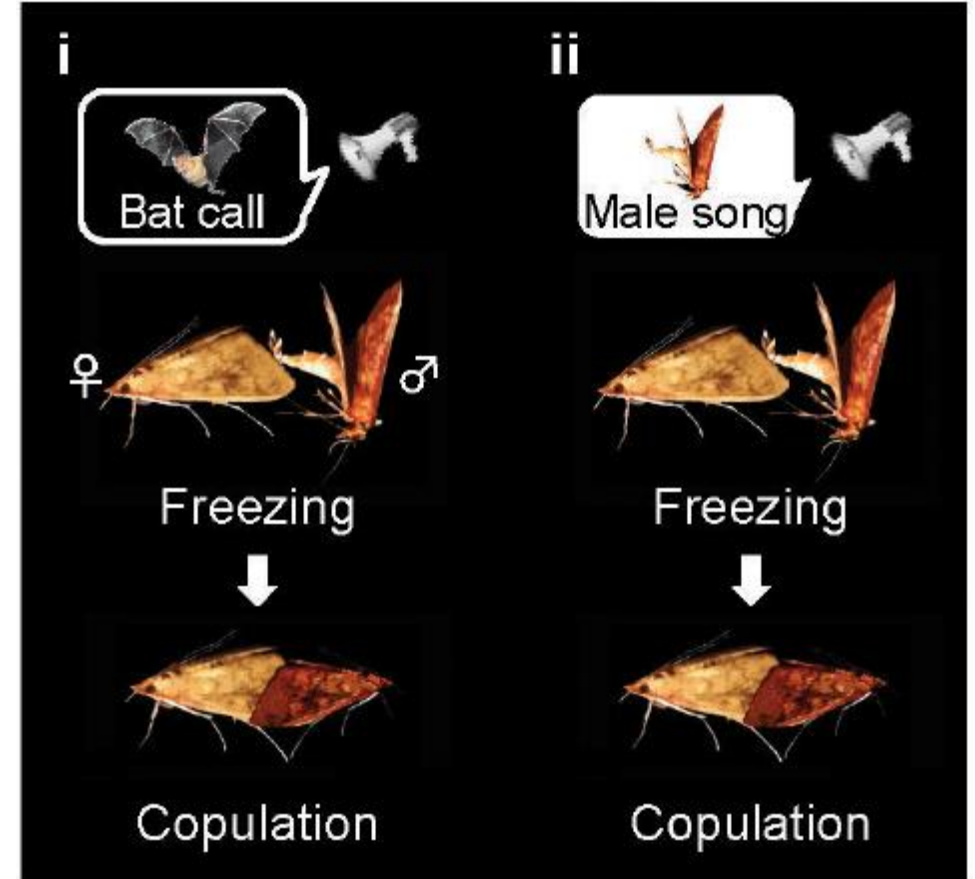
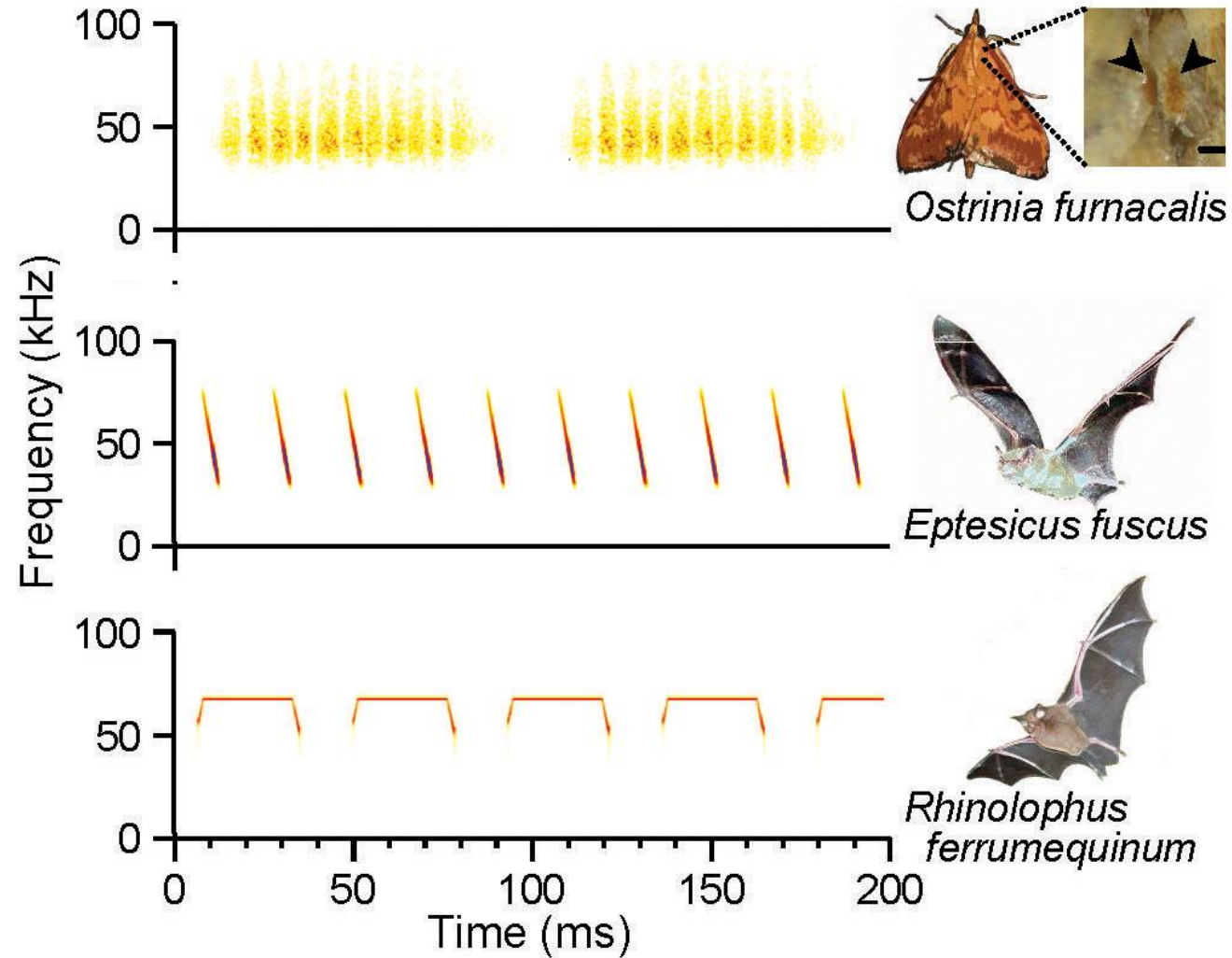
(Mitchell et al., 1998, Arch. Sex. Behav.)

Deceptive songs



Asian Corn Borer Moth

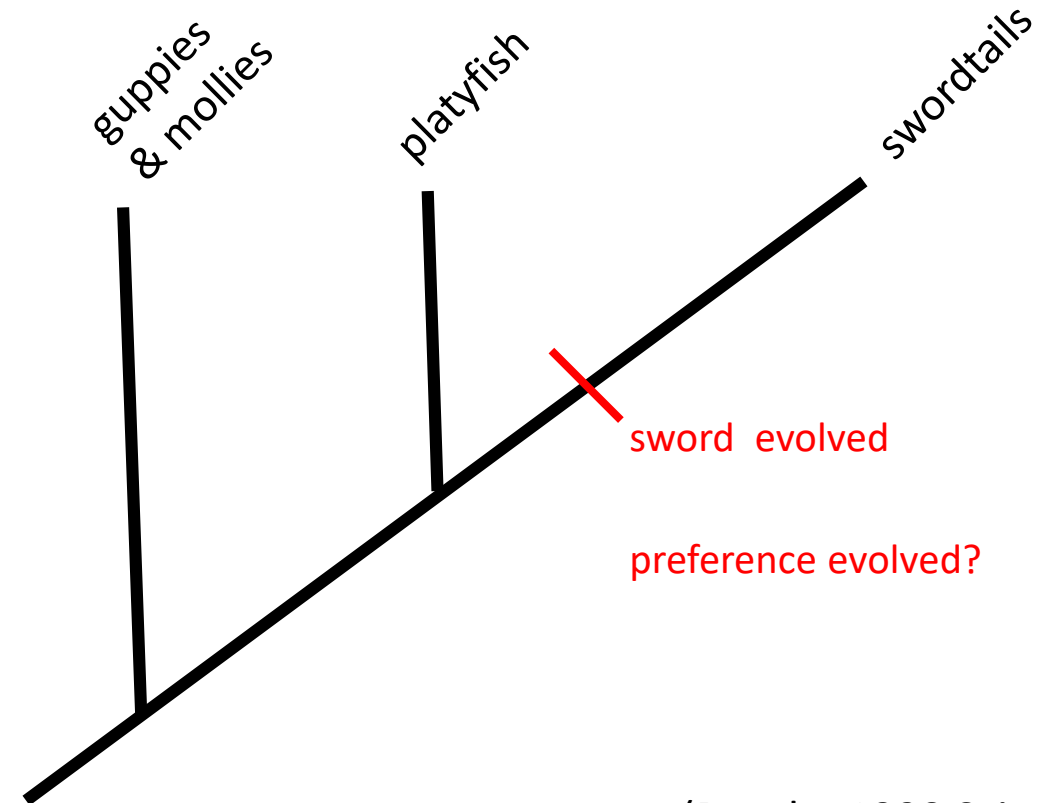
Deceptive songs



Lock & Key Hypothesis for Mate Preference

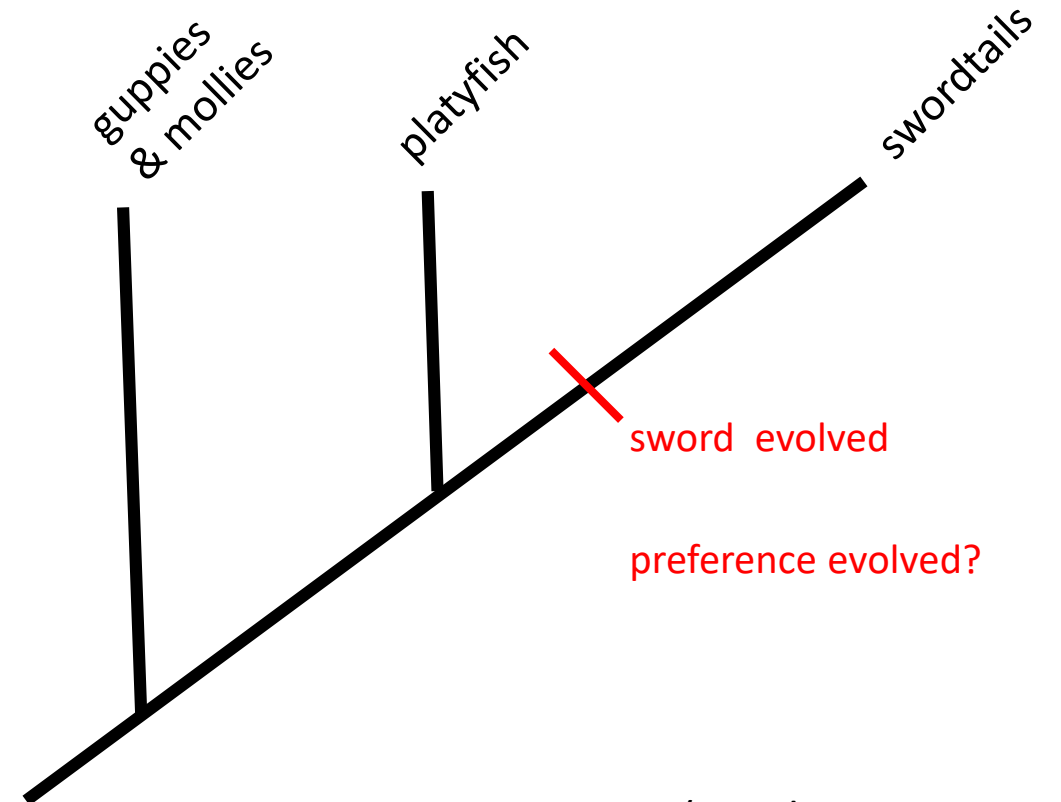
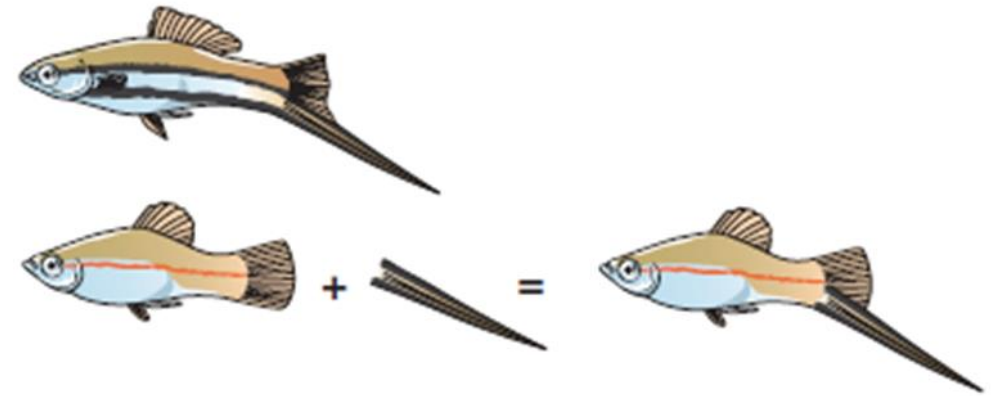


Sensory Exploitation



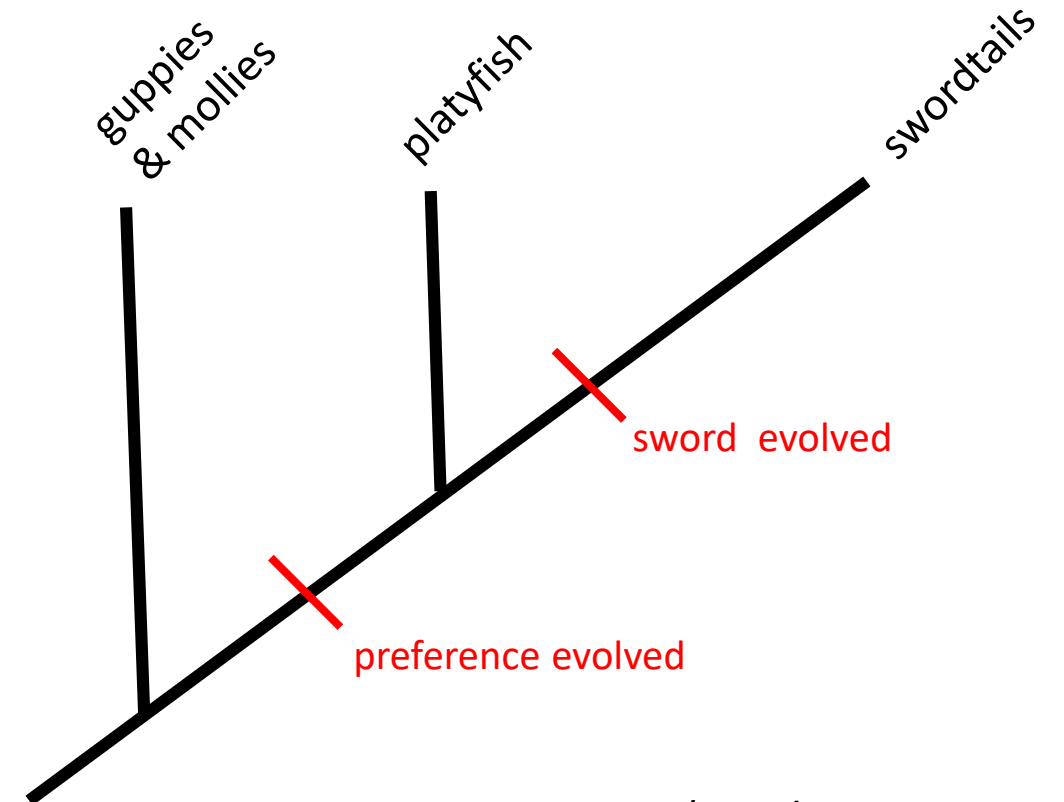
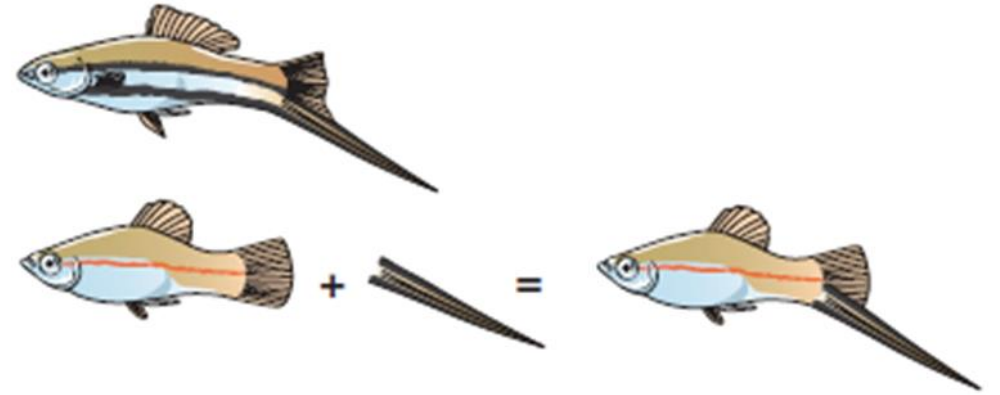
(Basolo, 1990 Science)

Sensory Exploitation

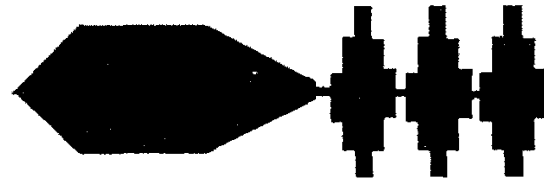


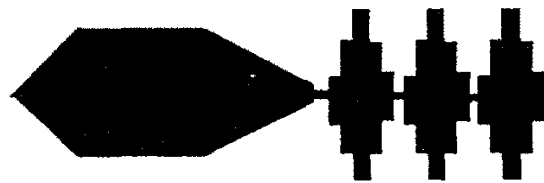
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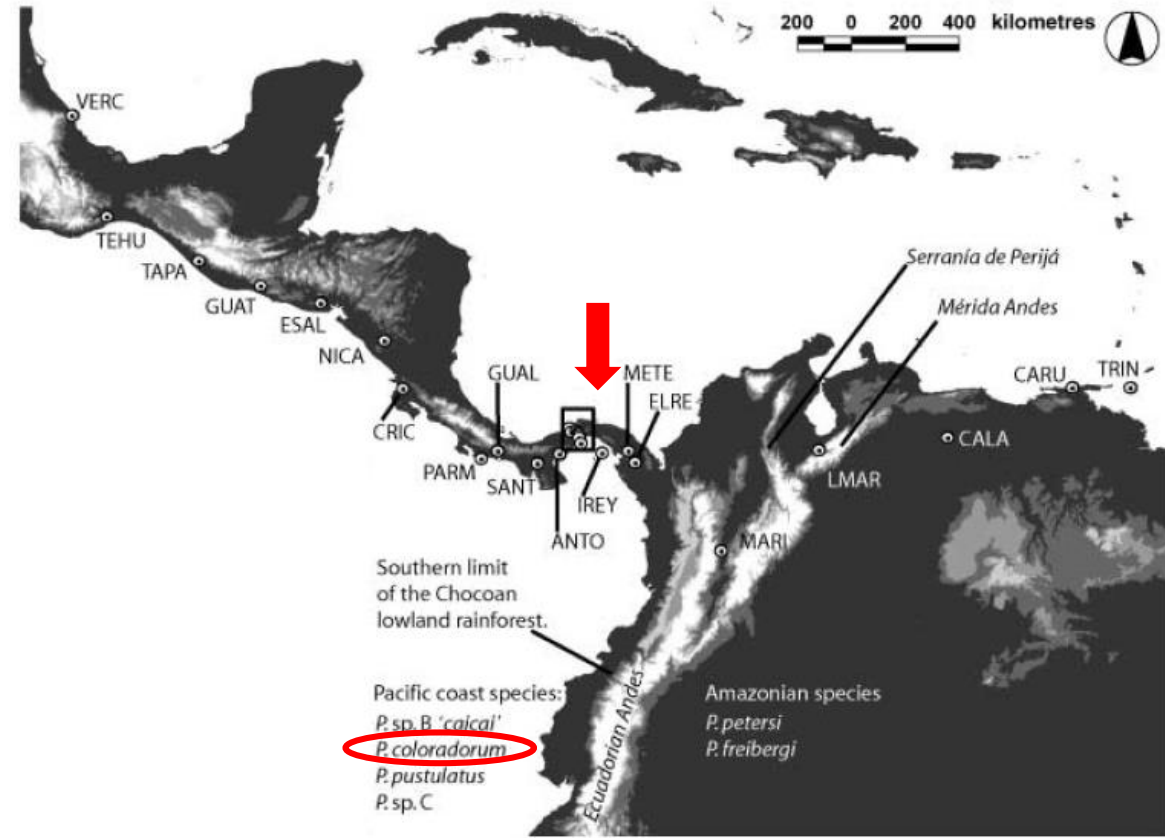
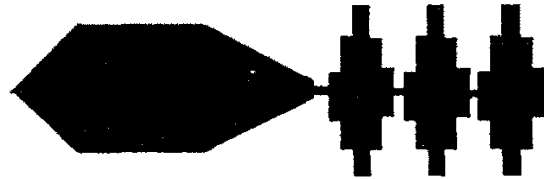
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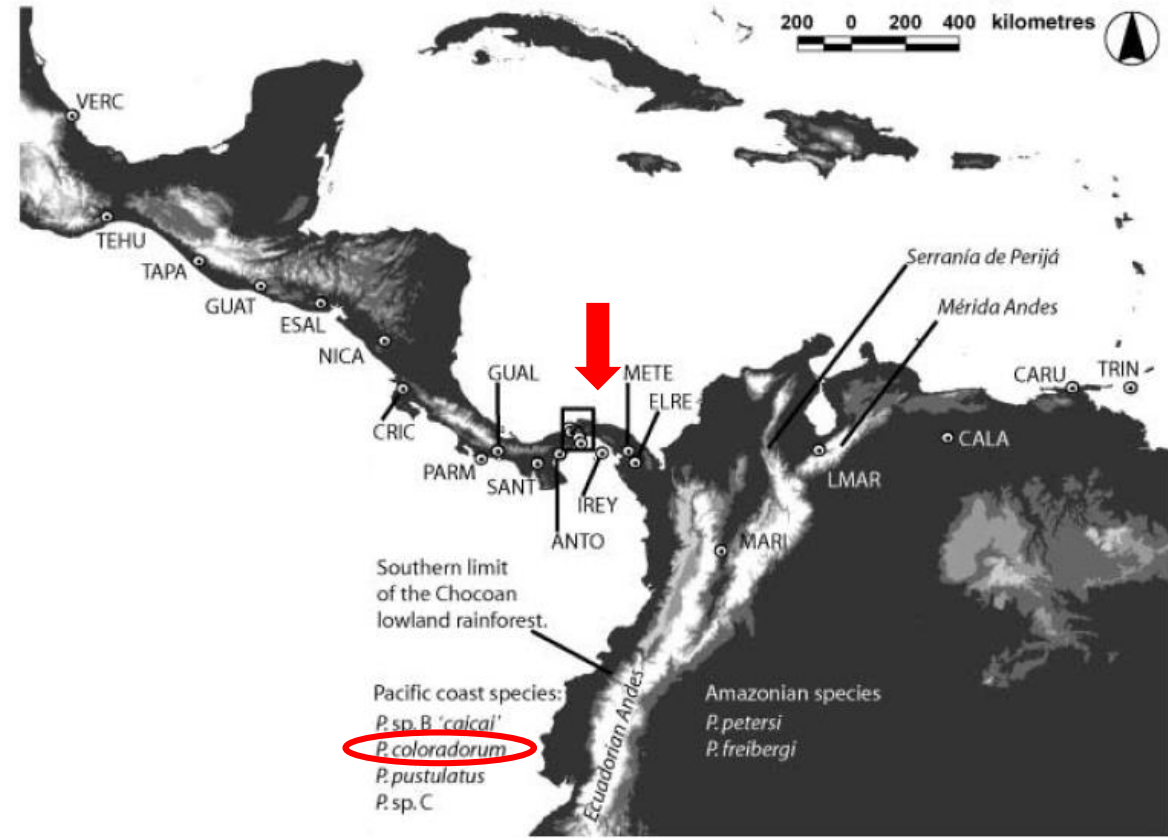
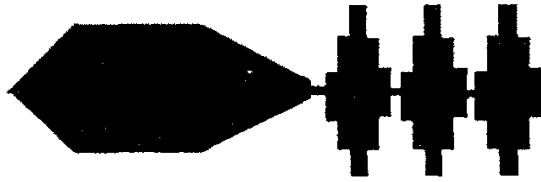


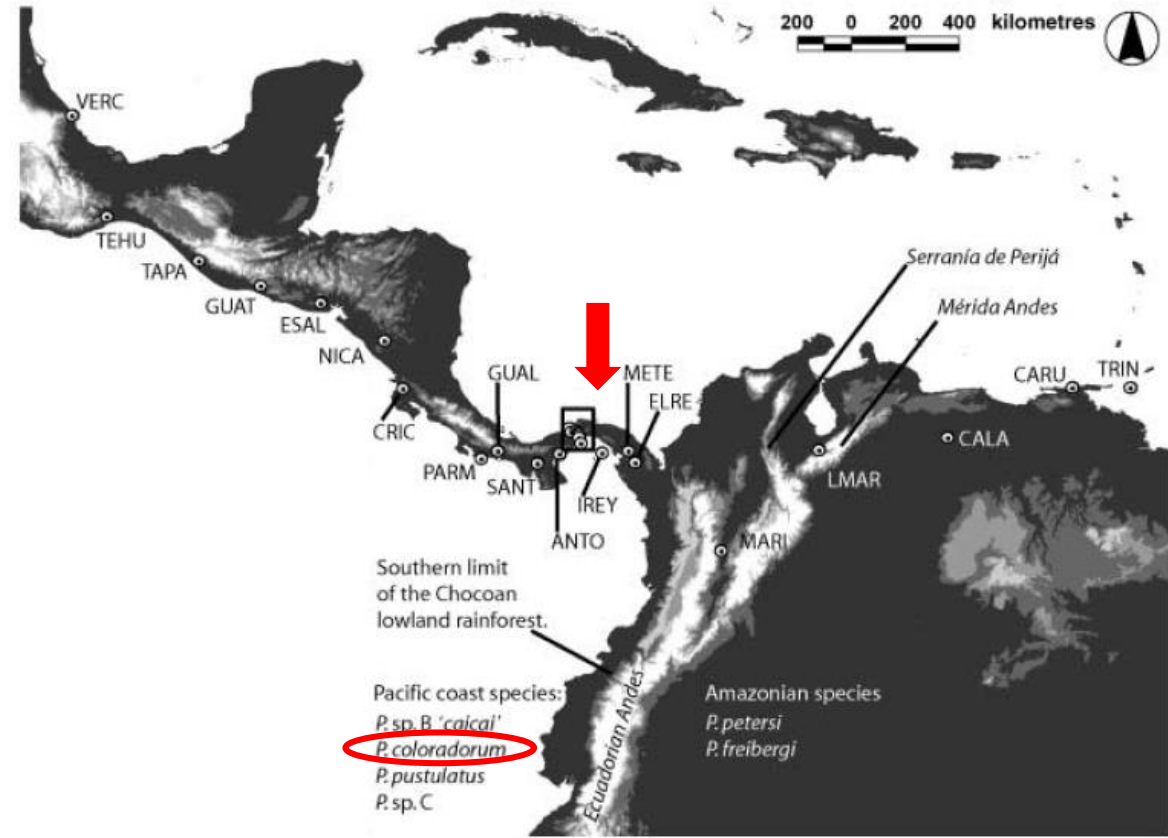
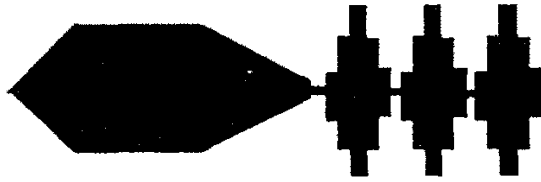
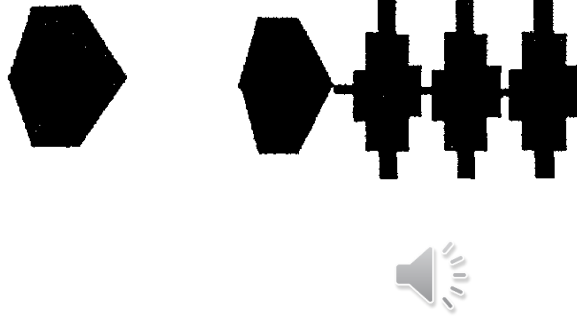
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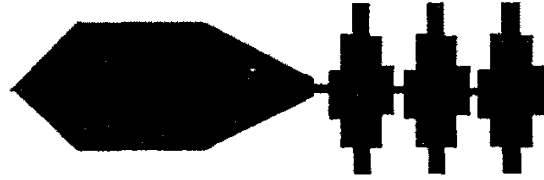
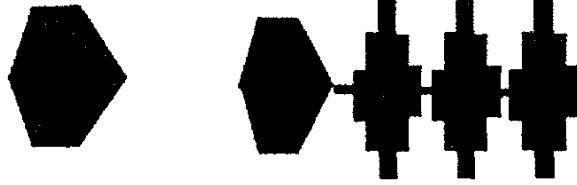




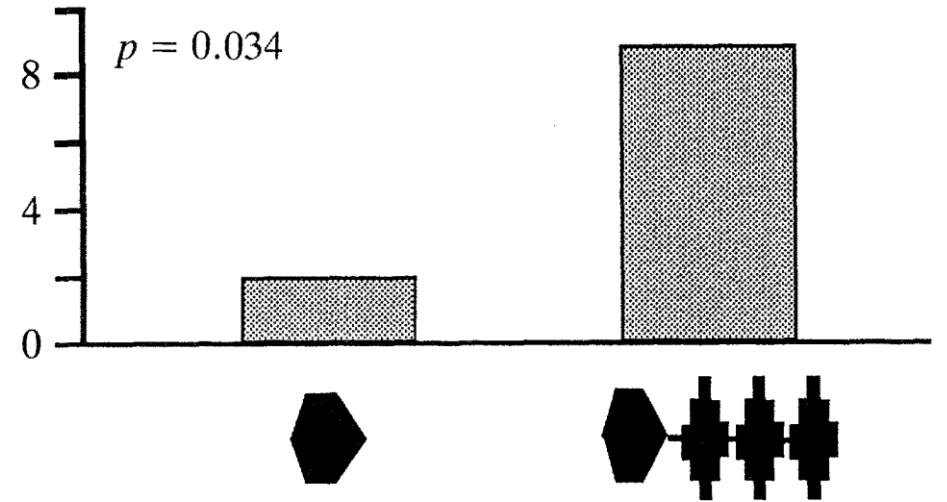








Physalaemus coloradorum



FICKLE

www.NatuRuh.com



Do the girls really get prettier at closing time?



Do the girls really get prettier at closing time?



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#65991469



(Pennebaker et al., 1979, Pers. Soc. Psych. Bull.)

Do the girls really get prettier at closing time?



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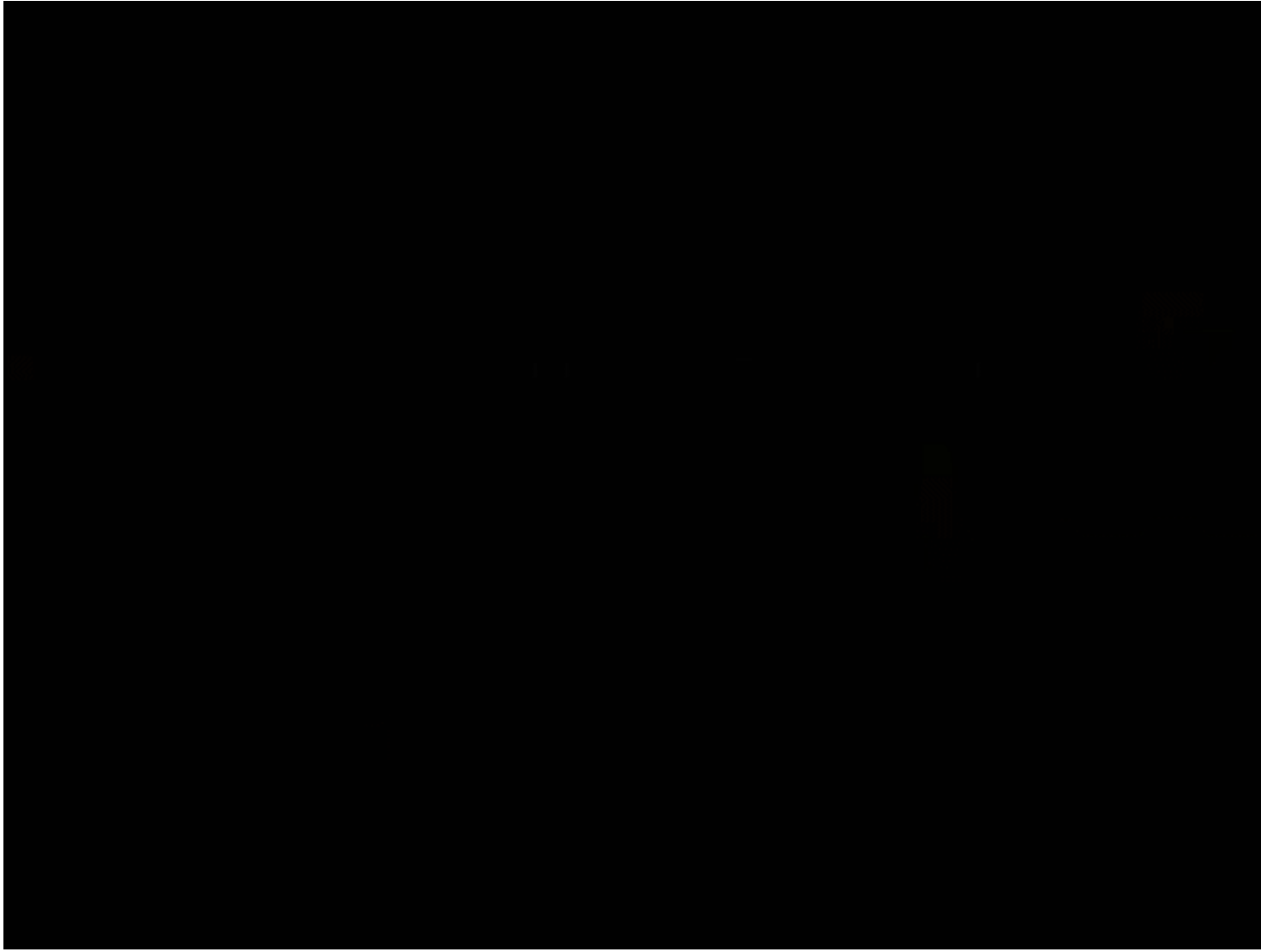


Ryan Taylor



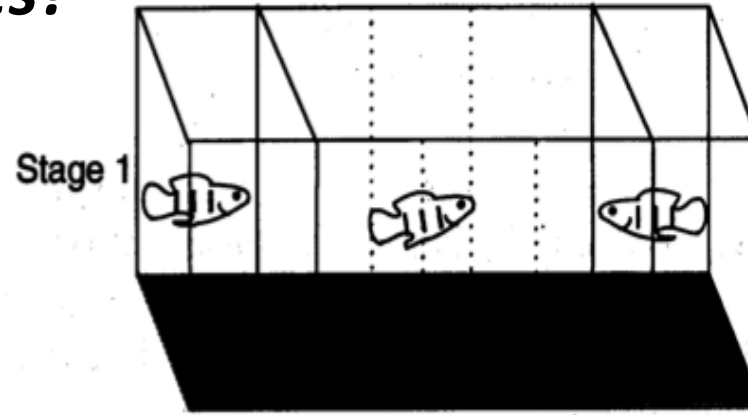
(Lynch, et al., 2005, Anim. Behav.)

Peer pressure & mate choice copying



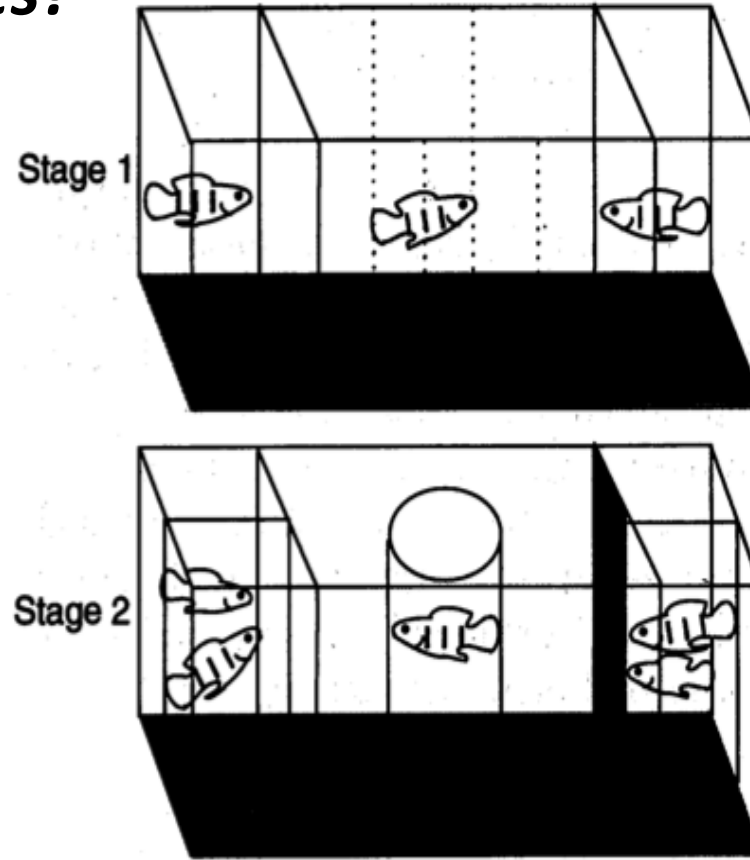
Reese Witherspoon in *Legally Blond*

Mate choice copying in mollies?



A female is in the center and allowed to associate with males courting behind glass barriers. She prefers the larger male.

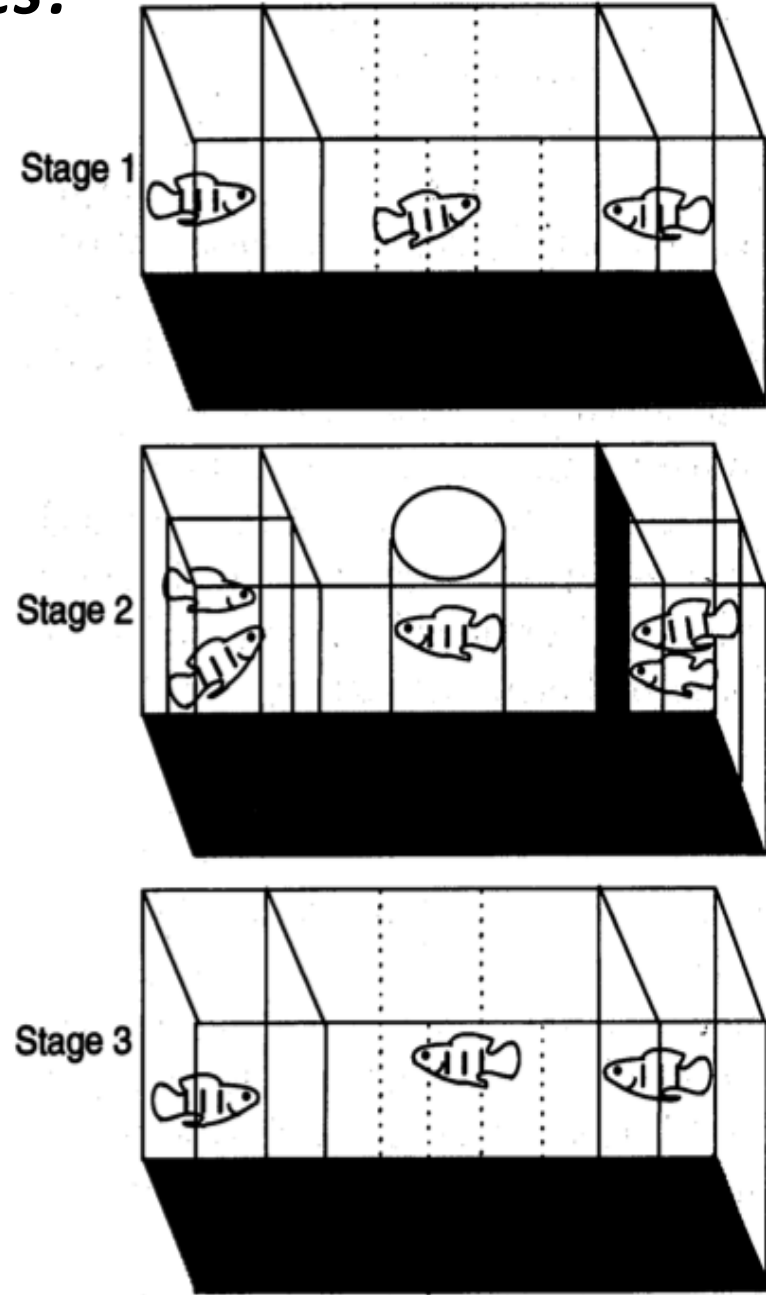
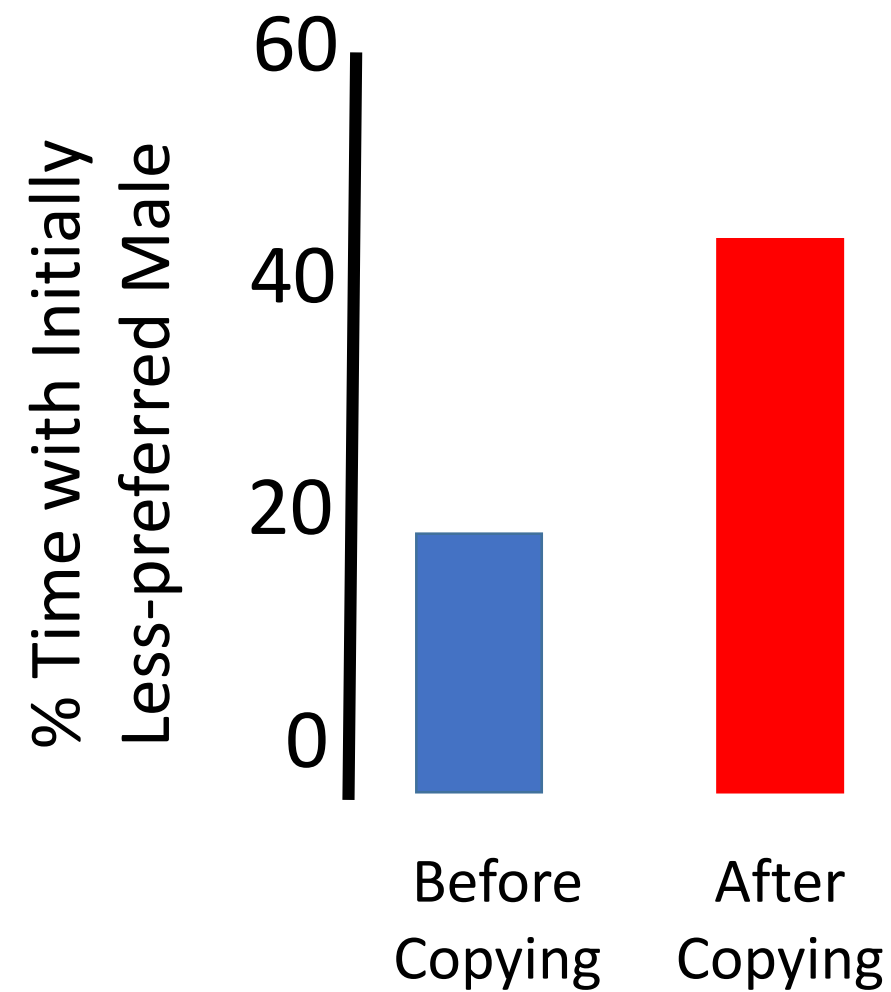
Mate choice copying in mollies?



A female is in the center and allowed to associate with males courting behind glass barriers. She prefers the larger male.

The female is constrained to the center. Each male is given a female, but the focal female can only see the less preferred male with a female.

Mate choice copying in mollies?



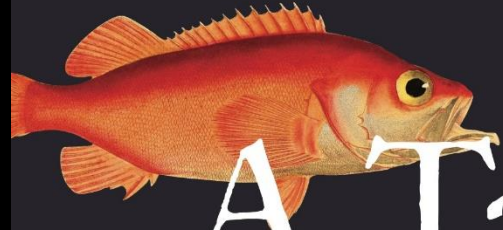
A female is in the center and allowed to associate with males courting behind glass barriers. She prefers the larger male.

The female is constrained to the center. Each male is given a female, but the focal female can only see the less preferred male with a female.

The preference test is now repeated and the female changes her preference toward the previously less preferred male.



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