WELCOME TO PSYC 110

PSYC 110 (General Psychology)

Module 3:
Evolutionary Psychology

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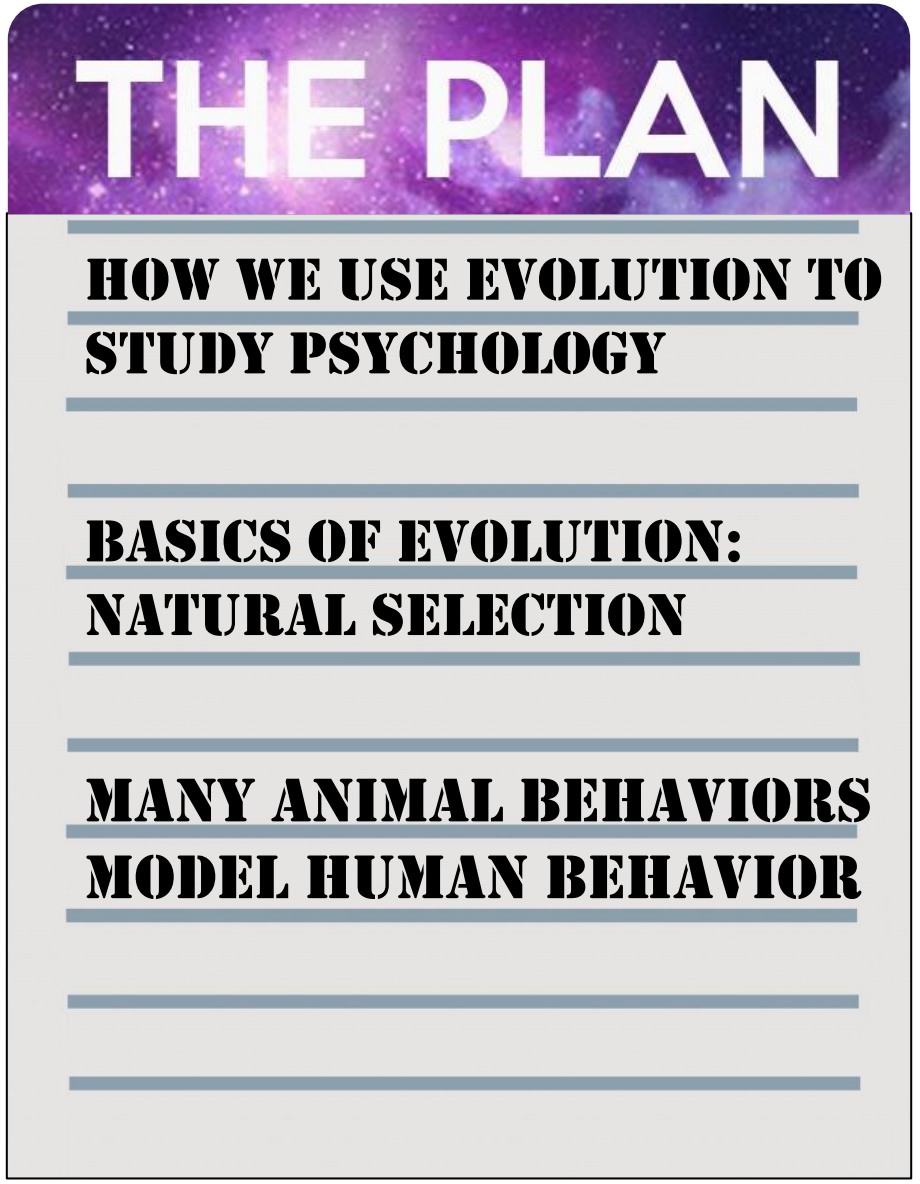
What should we get out of today?



PSYCHOLOGY

WELCOME TO PSYC 110

Evolution is the unifying theory of psychology

Wedekind and colleagues (1995) experiment:

"Odor Donors"
Wear same t-shirt for two nights
Not allowed to use fragrances
Seal t-shirt in Ziploc bag after use

"Odor Judges"
Smell each t-shirt
Rate t-shirts according to intensity and pleasantness
Report their own contraceptive use

Measured Human Leukocyte Andogens
(genes associated with immune function)
in all participants

Genetics drive many thoughts and behaviours

Wedekind and colleagues (1995) RESULTS:

Naturally cycling women (no hormonal contraceptives)

Rated men genetically <u>different</u> to themselves as smelling more pleasant

Women taking oral hormonal contraceptives (birth control; the pill):

Rated men genetically <u>similar</u> to themselves as smelling more pleasant

What do these results mean?

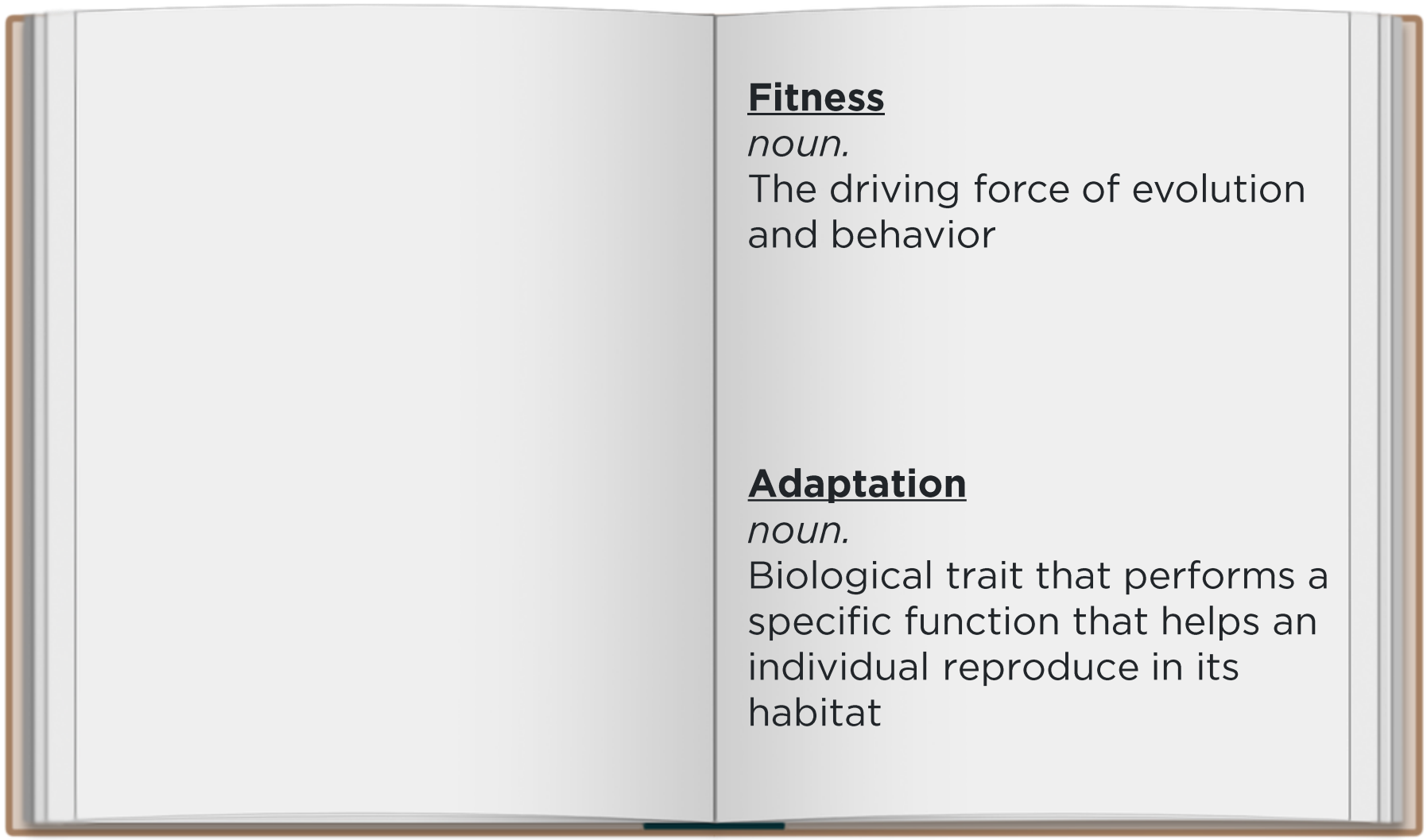
Wedekind and colleagues (1995) IMPLICATIONS:

Behavioural
A woman's choice of mate is influenced by her response to his odor

Genetic
Studies have found couples with similar MHC genes are more likely to produce offspring with weak immune systems

Evolutionary
Because women taking contraceptives are functionally infertile (their body *thinks* they're pregnant), their preferences reflect social support (genetic relatives) rather than strong offspring

Adaptations are functional traits



Fitness
noun.
The driving force of evolution and behavior

Adaptation
noun.
Biological trait that performs a specific function that helps an individual reproduce in its habitat

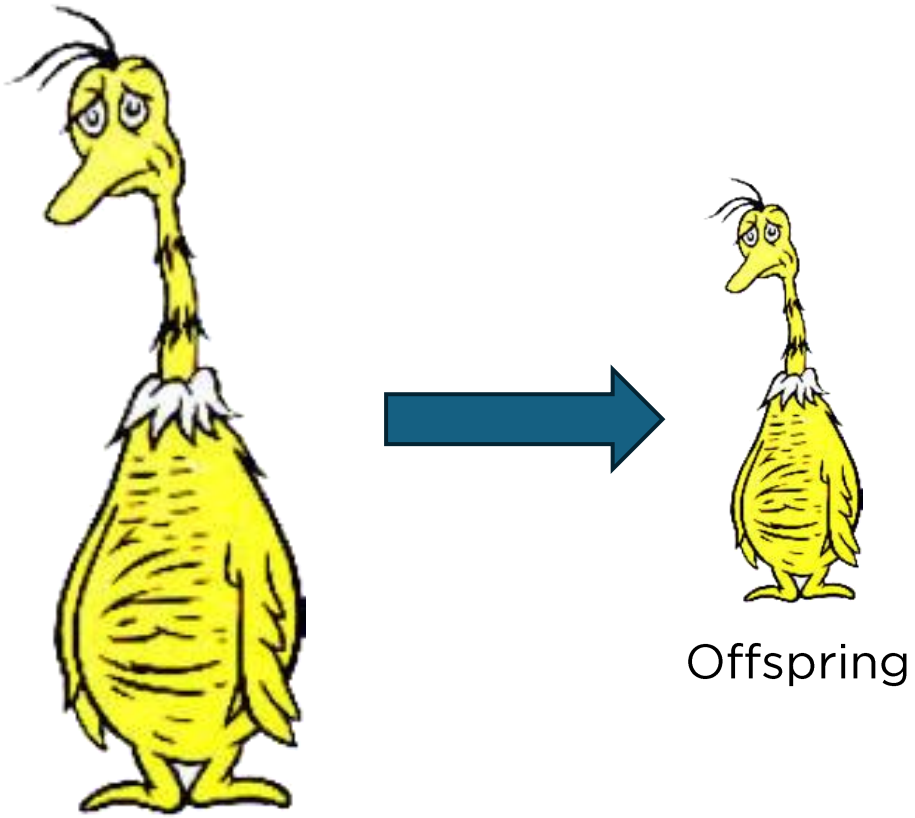
Survival of the fittest? Kinda.

COMMON MISCONCEPTION:
"Survival of the fittest"

Survival is a desirable goal according to evolution, but only because...

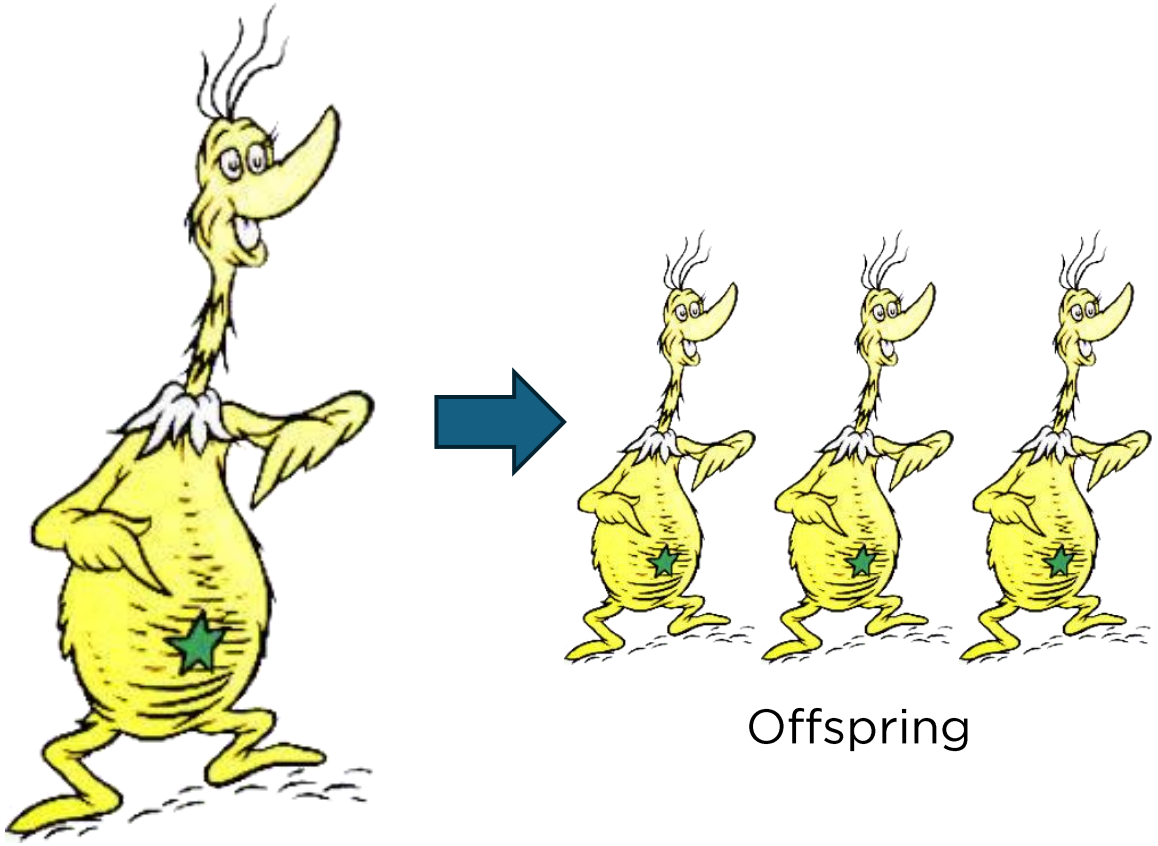
...the longer we survive, the more we can reproduce

Reproductive Success = Evolutionary Fitness



Low fitness

A new trait appears in a small part of the population, usually via some sort of genetic mutation…



High fitness

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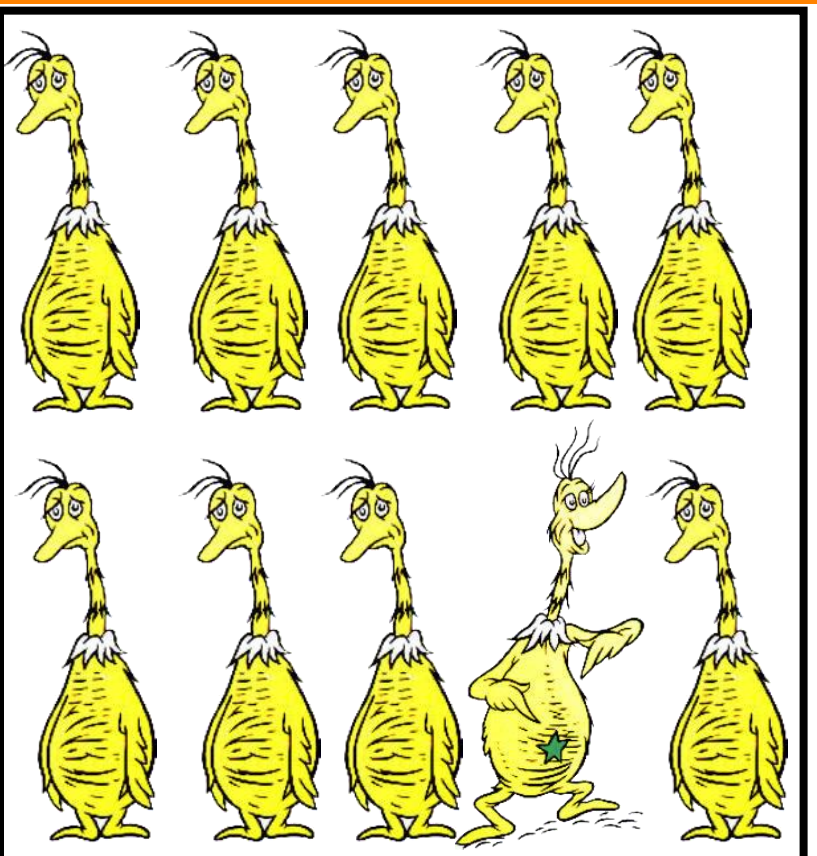
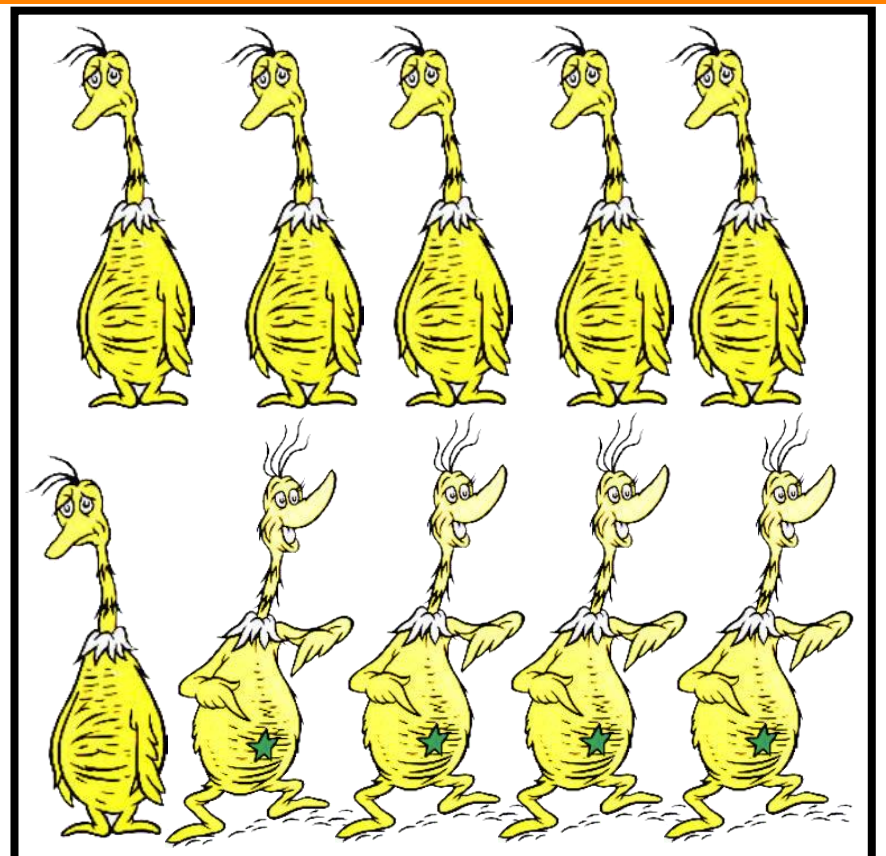
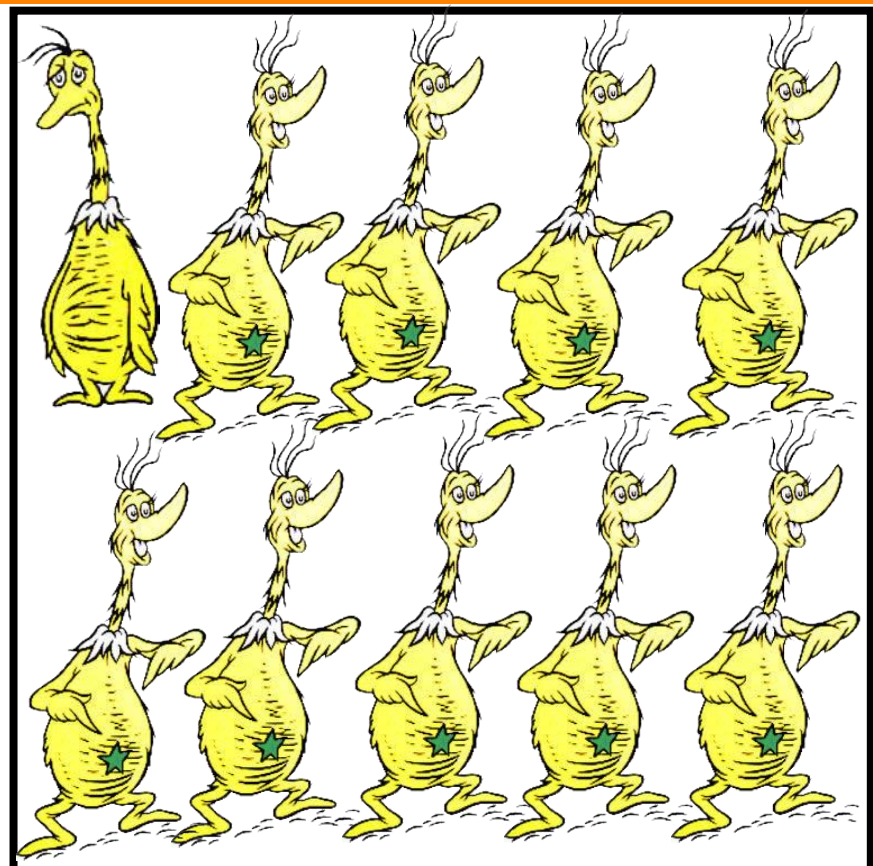
Reproductive Success = Evolutionary Fitness



Generation 1
(10% Star-Belly)



Generation 2
(40% Star-Belly)



Generation 3
(90% Star-Belly)

If a trait (e.g., a star-belly) increases the likelihood of reproduction, it will be more prevalent in each subsequent generation

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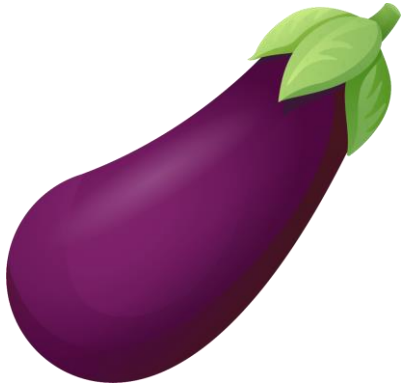
An adaptation will occur in favour of the four F's

Fight

Flight

Feeding

Reproduction



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Cognitive psychologists study the adaptive functions of mental abilities

Some examples of adaptive psychological characteristics:

Selective Attention
Focus on things in our environment
(e.g., food, danger, mates)

Memory
Remembering our environment
(e.g., where food is, where danger is, where mates are)

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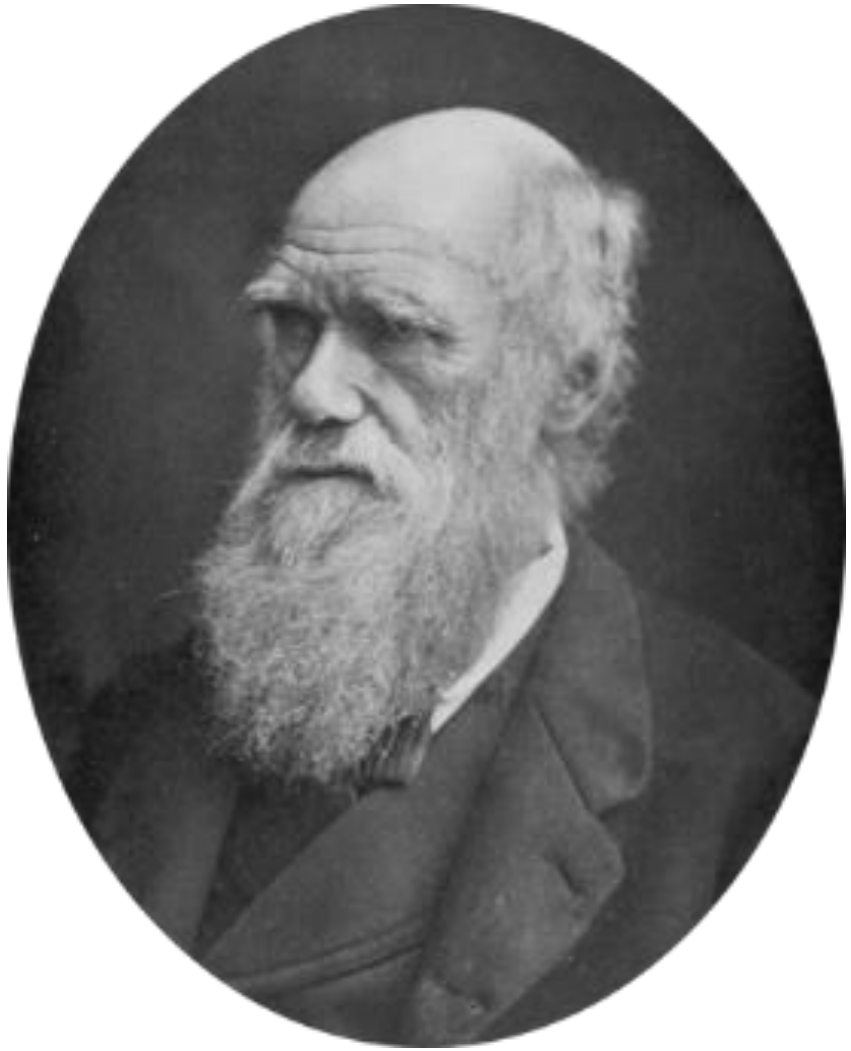
Adaptations arise through natural selection



Charles Darwin

<u>Natural Selection</u>

Differential survival and reproduction of organisms as a result of the heritable differences between them

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Favorable traits are selectively transmitted across generations

Three components of Natural Selection:

1) Individual differences
   - Variation in characteristics

2) Differential reproduction
   - Certain organisms in a species have more offspring than others

3) Heritability
   - Traits are passed down to the next generation

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One problem with studying evolution…

Evolution is SLOWWWW
Adaptations sometimes aren't observed clearly until many generations have come and gone

How can we model the presence/loss of traits across many generations in a short amount of time?

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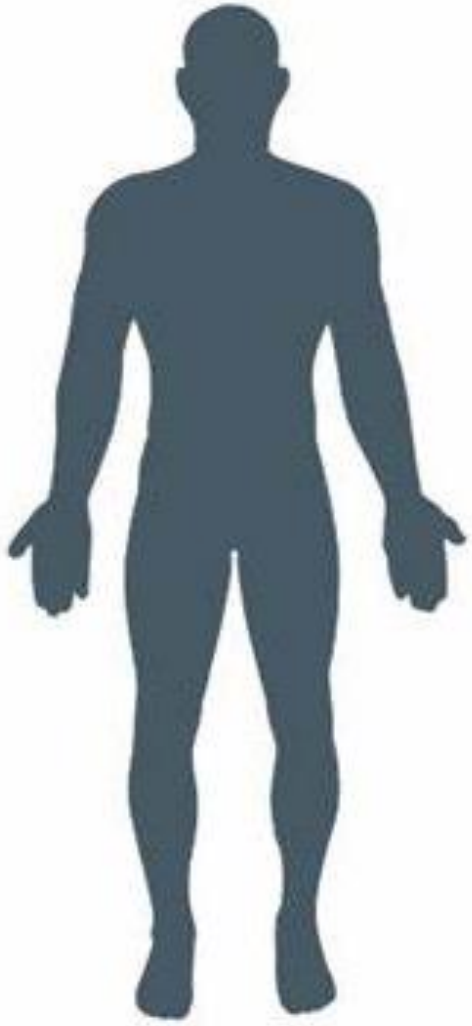
We use fruit flies to model how adaptations occur



New generation every 26 years

New generation every 26 hours

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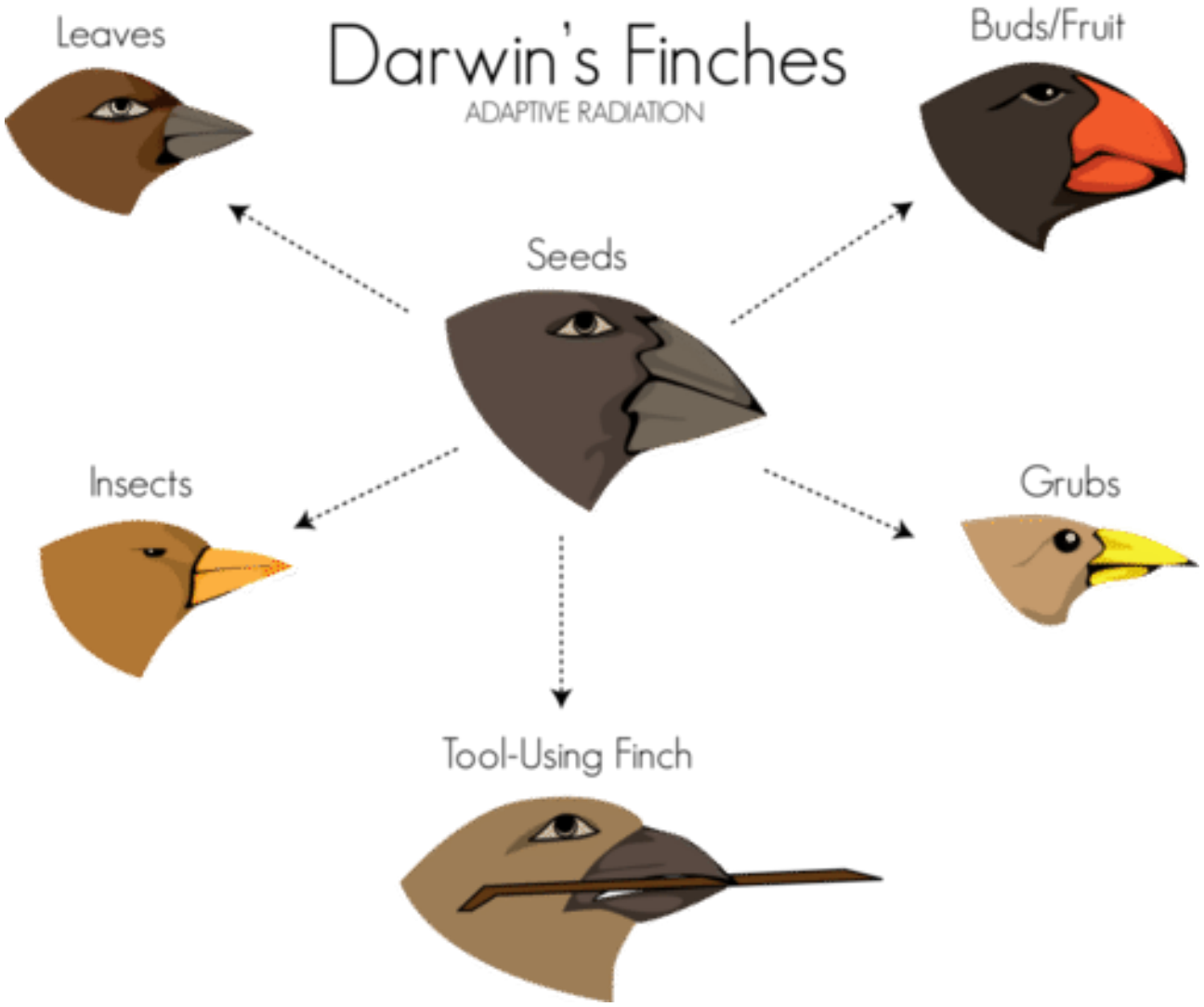
We adapt to changes in our environment



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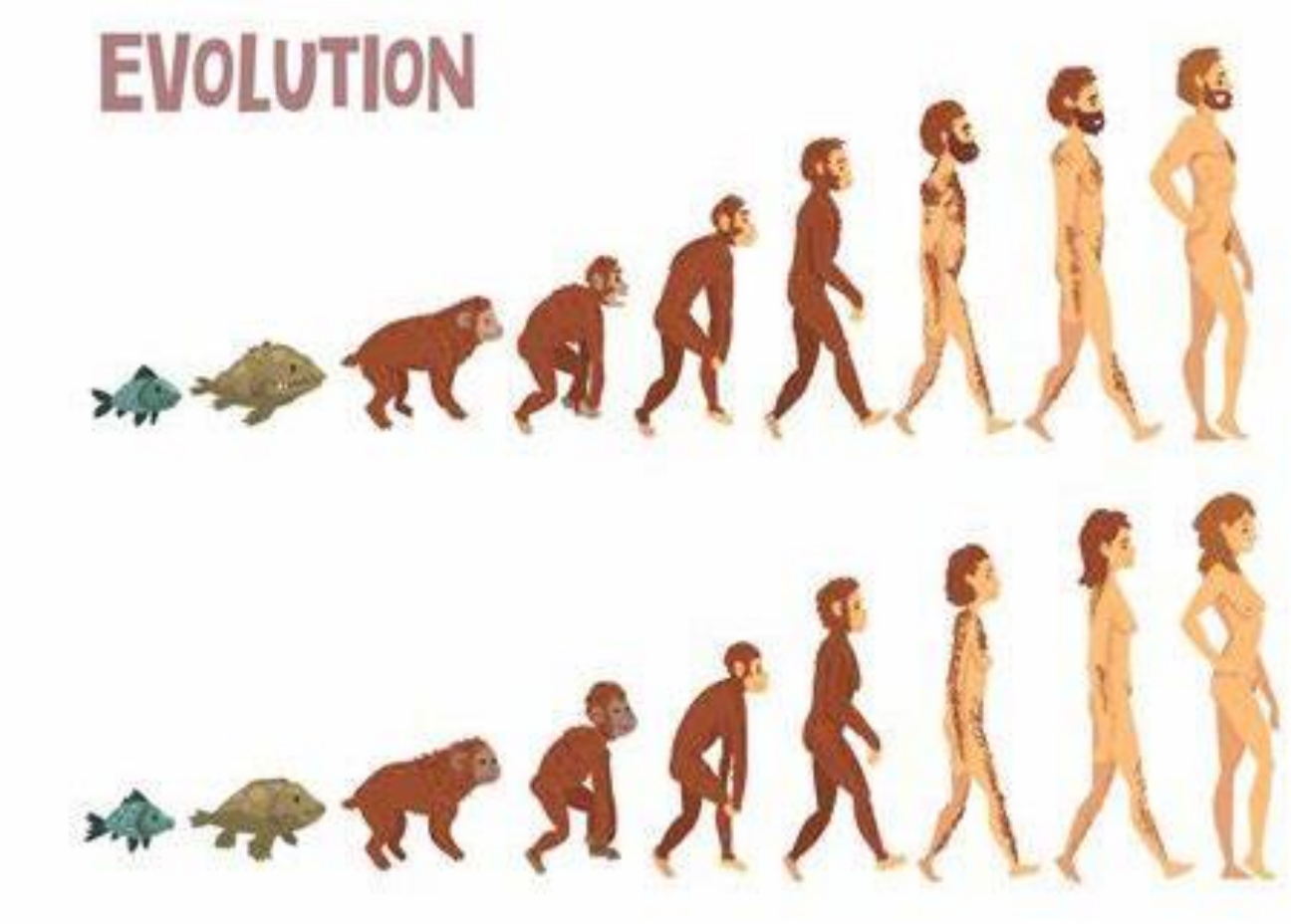
Animal behaviour can model human behaviour



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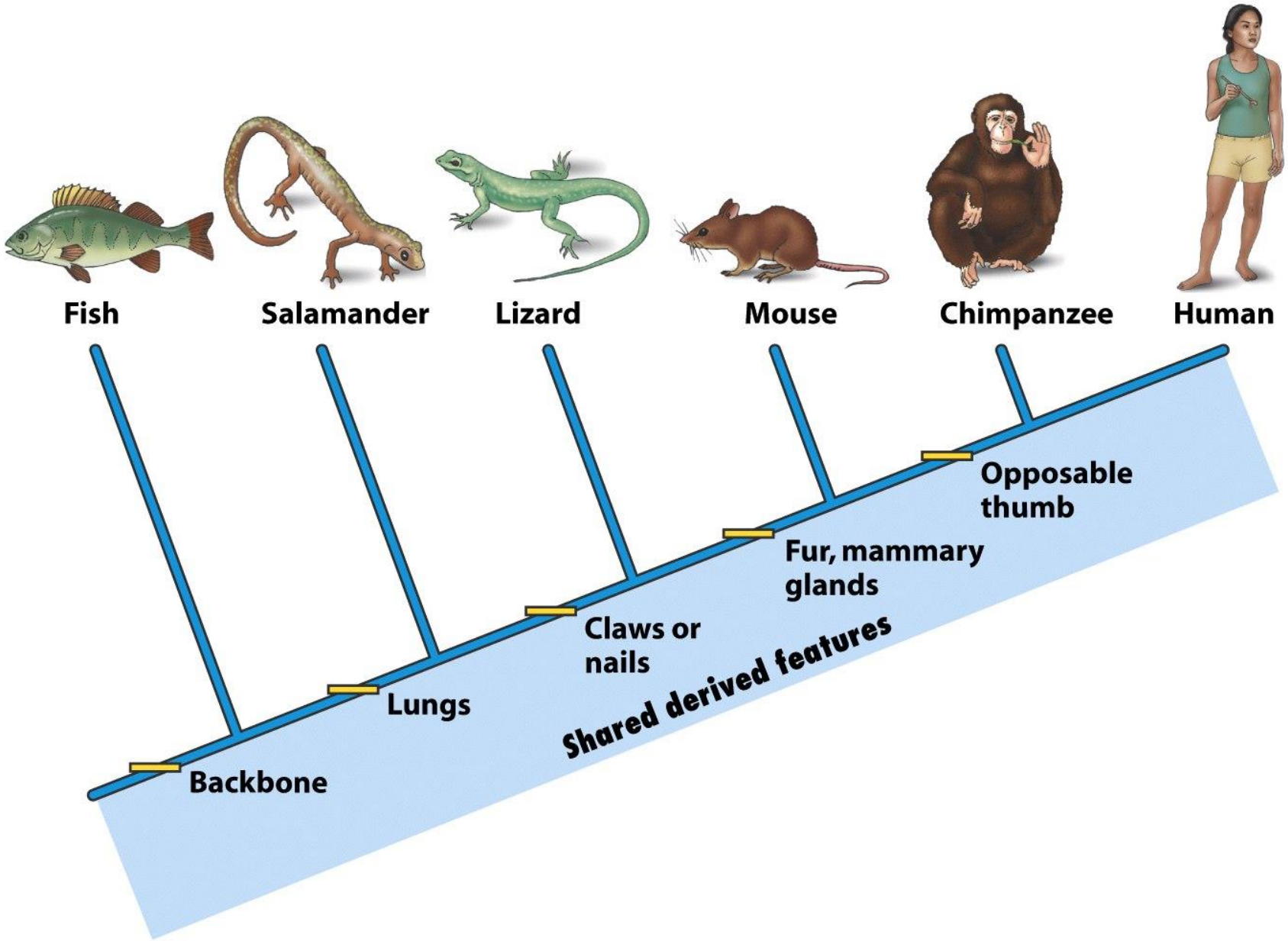
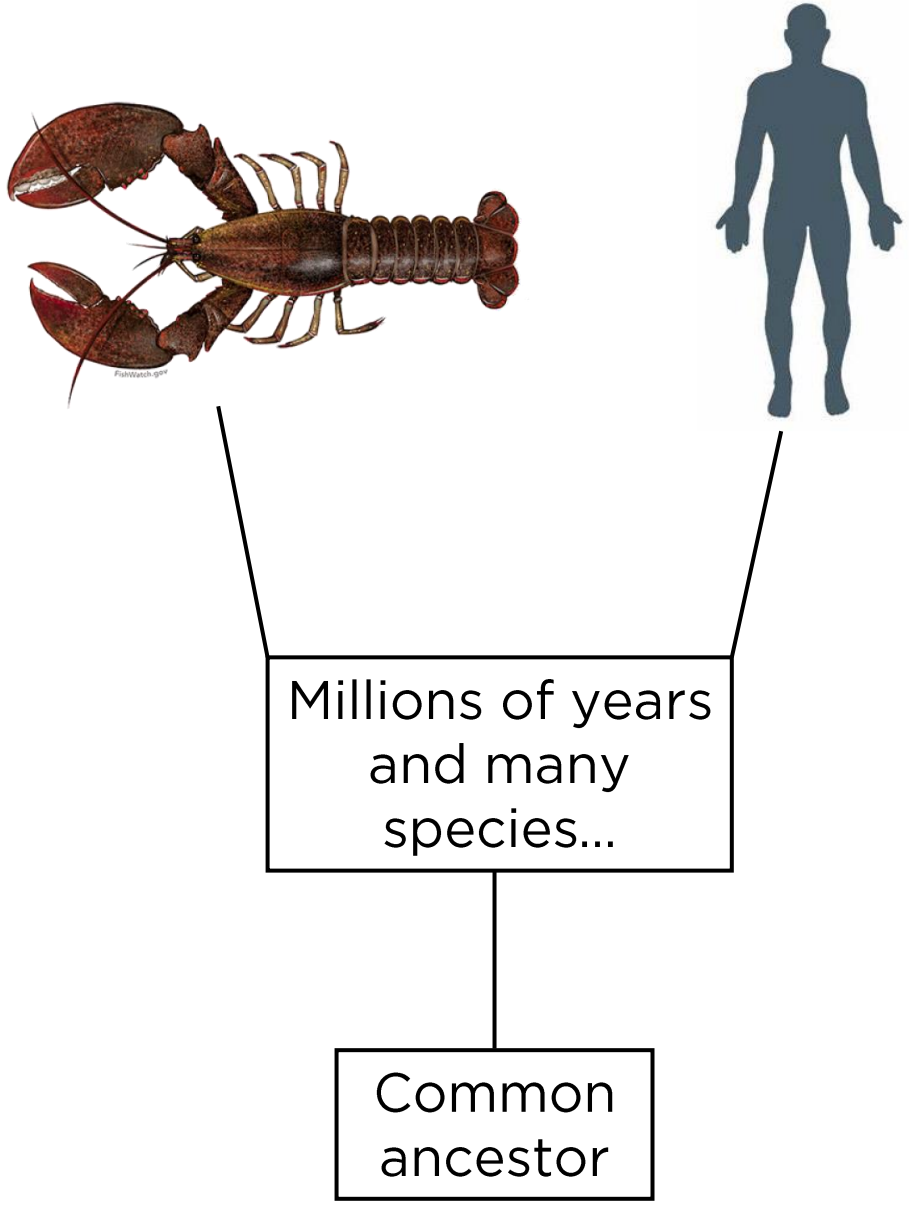
Common ancestors can guide our predictions



Ogres are like onions and people are like…lobsters?



Social Hierarchies

Lobsters who tend to lose fights have different brain chemistry and behaviour than those who tend to win

If a lobster loses multiple fights in a row, we can observe the change from “Winner” type to “Loser” type

Can we think of a human behaviour or trait that is similar?

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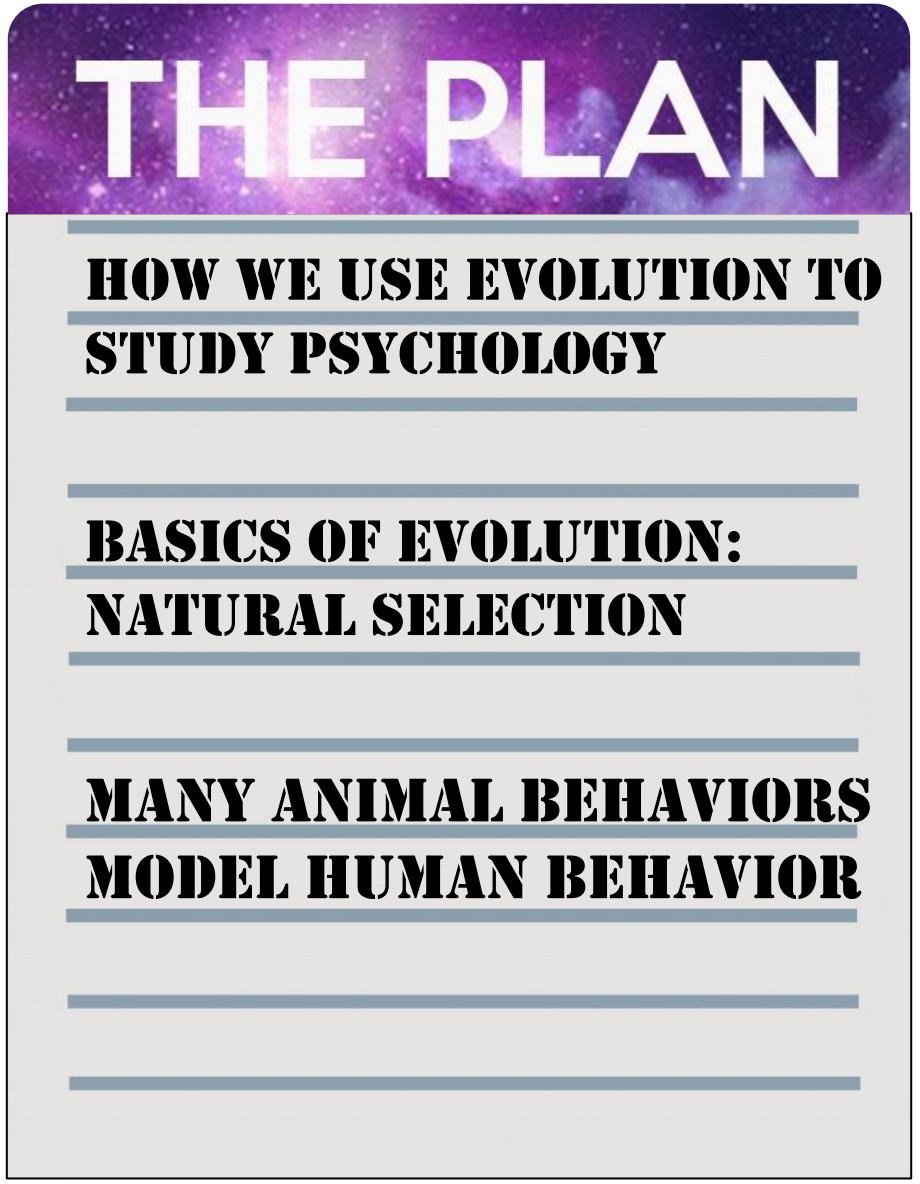
We ain't nothing but mammals: Clubbing in the Wild

https://www.youtube.com/watch?v=q8zwIphm5r4&pp=ygUUY2x1YmJpbmcgaW4gdGhlIHdpbGQ%3D

The key concept to understand evolution

What should we get out of today?



Plan for next class

For y'all:

Reflection Journal 2 is **due Feb 9**

No InQuizitive this week

First rotation of Discussion Section Participation Grading starts this week