

Biology Graduate Student Association presents:
BIO-BUGS



The Genetics of Behavior

Opening the black box of termite behavior
or

How to do a PhD dissertation in 3 hours

The Black Box

That which is not
understood

Famous Black Boxes

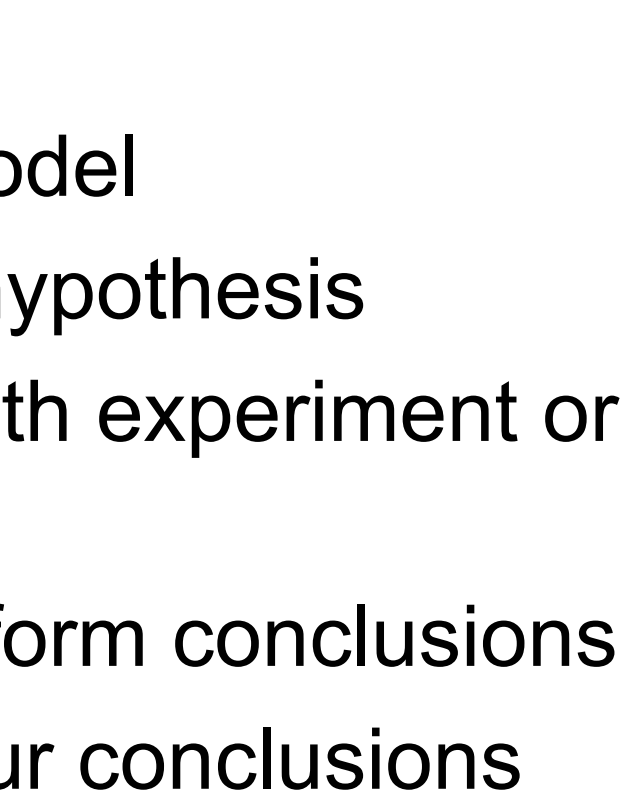
What is the
basic unit of
matter?

What is the
basic unit of
life?

What is the
source of
behavior and
thought?

How big is
the universe?

The Scientific Method

1. Observation
 2. Hypothesis or Model
 3. Prediction from hypothesis
 4. Test prediction with experiment or observation
 5. Interpret results, form conclusions
 6. Communicate your conclusions
- 

Hypothesis + Prediction Statement IF THEN

Hypothesis: The Earth's gravity attracts other objects

Prediction: If I drop something, then it will fall towards the Earth

Test?

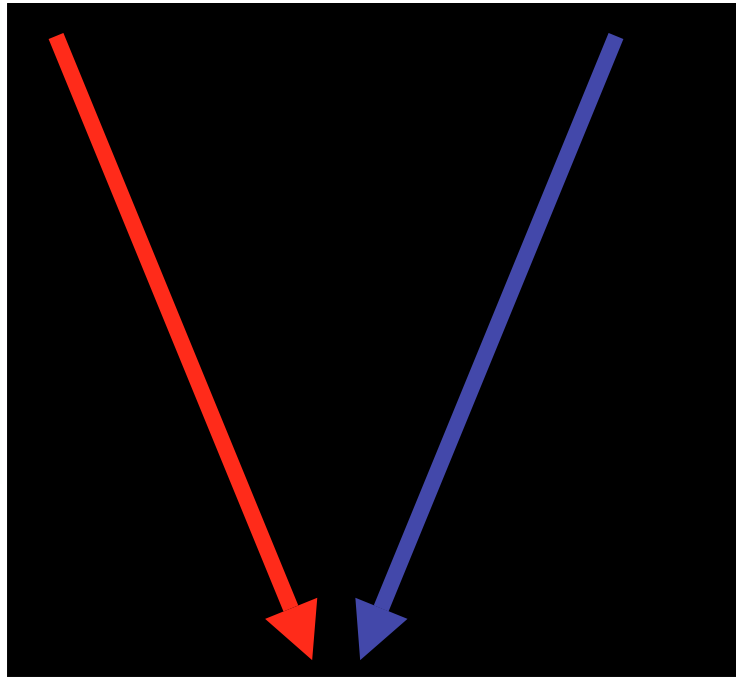
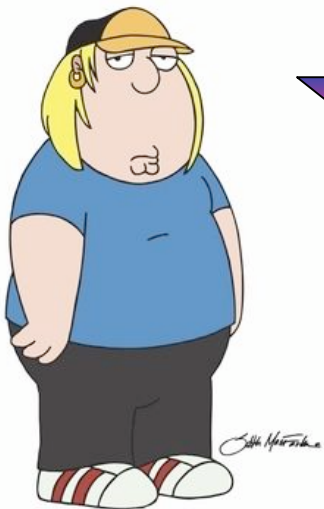
Cell Phone Scientific Method



1. Observation
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Nature Nurture

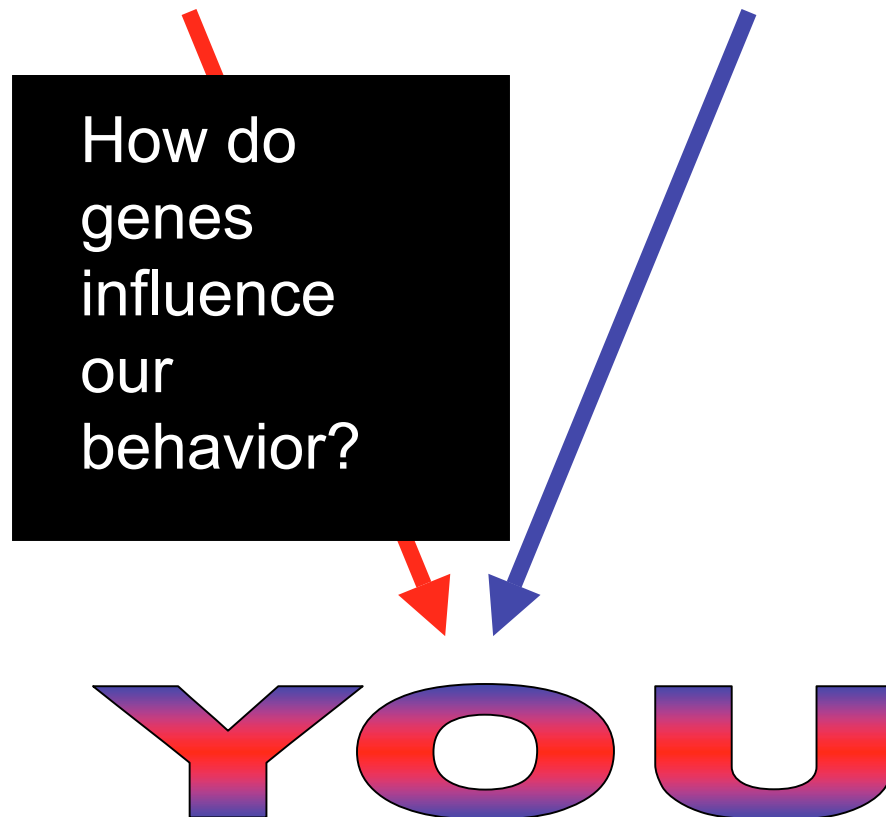
Genes vs. Environment



YOU



Genes vs. Environment



Nature Genes

How do
genes
influence
our
behavior?

Simple Example:
Can you roll your tongue?

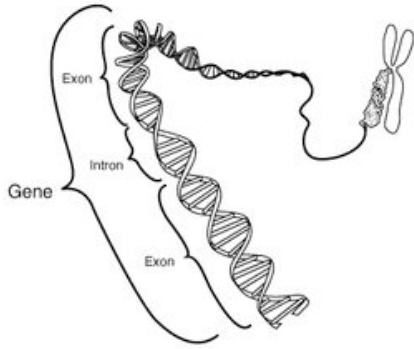


YOU

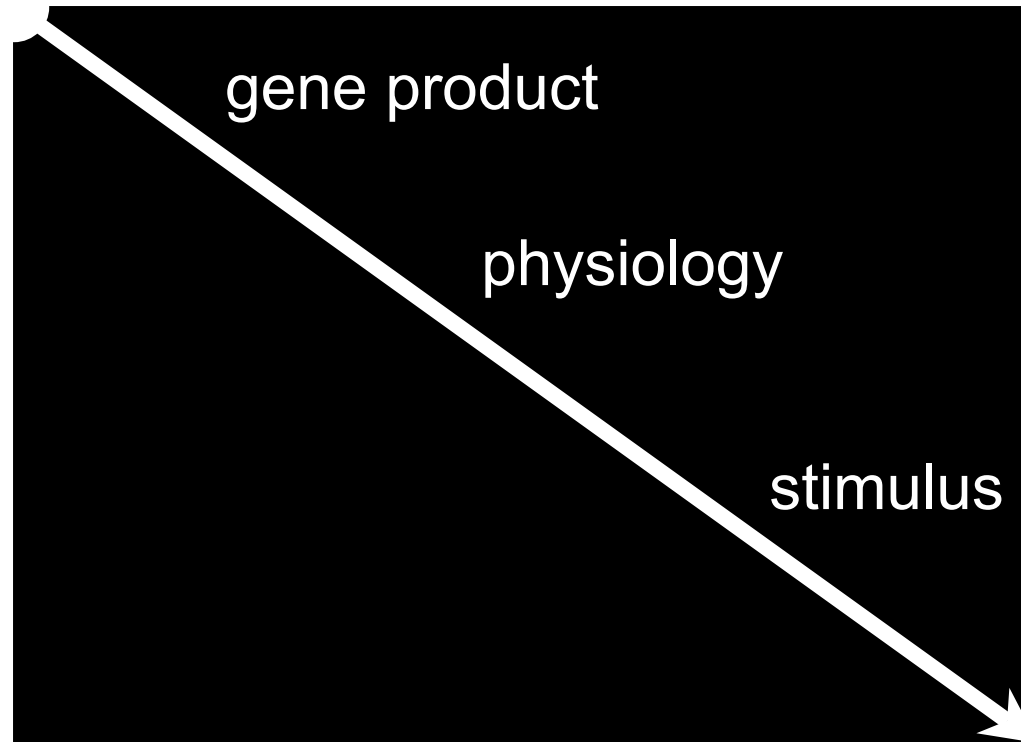
Hypothesis: Tongue rolling ability is affected by genes that we inherit from our parents

- If I can/cannot roll my tongue
- Then one or both of my parents can/cannot roll their tongue.

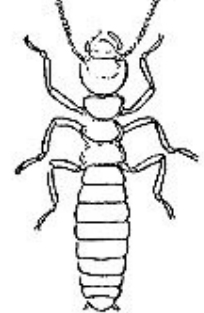
Today's Black Box



gene



behavior





Part 1 - Termite Behavior

- Divide into groups
 - 1 Animal Care Technician
 - 1 Molecular Technician
 - 1 Principal Investigator
- Receive Termites
 - Be gentle!

- Draw some lines
- Observe behavior
- Make a hypothesis about the stimulus
- Make a prediction about how the termite will act if your hypothesis is true
- Test your hypothesis - Repeat
- Communicate your best hypothesis

