**Chapter 51- Behavioral Ecology Activity AP Biology/ Ms. Day**

**Proximate and Ultimate Causes of Behavior Activity**

* **Proximate causes-**
  + What mechanism enables the organism to exhibit the behavior? HOW does the behavior happen?
  + Explanation of an animal's behavior based on trigger stimuli and internal mechanisms
* **Ultimate causes**
  + In terms of evolution, WHY did that behavior come to be?
  + Explanation of an animal's behavior based on evolution
  + An explanation of WHY this specific behavioral trait was favored by evolutionary mechanisms such as natural selection

**EXAMPLES:**

1. **A zebra is drinking at a water hole, and all of a sudden it hears another zebra nearby make an alarm call, it may stop drinking immediately and start running away instead.**

* What is the proximate cause?
* What is the ultimate cause?

1. **When a female cat comes into heat, she urinates more frequently and in a large number of places. Male cats from the neighborhood congregate near urine deposits and fight with each other.**

* What is the proximate cause?
* What is the ultimate cause?

1. **During a field trip, an instructor touched the body of a moth resting on a tree trunk. The moth raised its forewings to reveal large eye-spots on its hind wings.**

* What is the proximate cause?
* What is the ultimate cause?

1. **Dogs often sleep on the end of their owners bed.**

* What is the proximate cause?
* What is the ultimate cause?

1. **Gorilla males are often large and like to show off their size to other gorillas.**

* What is the proximate cause?
* What is the ultimate cause?

**EXAMPLES: ANSWER KEY**

1. **Most humans love to eat junk food.**

* (proximate cause)
* Because it is high in calories which are the stuff the body needs to function (ultimate cause)

1. **Most humans love to eat junk food.**

* What is the proximate cause? Because it tastes/smells/looks good
* What is the ultimate cause? Because it is high in calories which are the stuff the body needs to function

1. **A zebra is drinking at a water hole, and all of a sudden it hears another zebra nearby make an alarm call, it may stop drinking immediately and start running away instead.**

* What is the proximate cause? The zebra heard the alarm call/warning.
* What is the ultimate cause? The alarm call was most likely a warning that danger (predators were in the area). The zebra runs to escape and survive. The alarm call alerts the zebra that danger, such as a lion, may be nearby and the lion can threaten the zebra's chance to survive.

1. **When a female cat comes into heat, she urinates more frequently and in a large number of places. Male cats from the neighborhood congregate near urine deposits and fight with each other.**

* What is the proximate cause? It is a result of hormonal changes associated with her reproductive cycle.
* What is the ultimate cause? Male cats respond to the odor because it is a means of locating females in heat.

1. **During a field trip, an instructor touched the body of a moth resting on a tree trunk. The moth raised its forewings to reveal large eye-spots on its hind wings.**

* What is the proximate cause? Certain sensory receptors had fired and triggered a neuronal reflex culminating in the contraction of certain muscles
* What is the ultimate cause? The behavior might frighten predators.

1. **Dogs often sleep on the end of their owners bed.**

* What is the proximate cause? Dogs sleep on their owners’ beds because it’s warm; Dogs are social and want to be close to their pack (family)
* What is the ultimate cause? Survival in dogs is keyed to living in close cooperation with other dogs.

1. **Gorilla males are often large and like to show off their size to other gorillas.**

* What is the proximate cause? Gorillas, because of their size, can scare away enemies without having to fight. Female gorillas are attracted to strong male gorillas.
* What is the ultimate cause? Gorillas that don’t waste energy fighting 🡪 live longer and produce more offspring.