Chapter 15: Animal Behavior

1. **I\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_—**born with it
   1. **Reflexes**
      1. Q , i\_\_\_\_\_\_\_\_\_\_\_\_\_ responses
      2. Do not require t\_\_\_\_\_\_\_\_\_\_\_\_
      3. Do not have to be t\_\_\_\_\_\_\_\_\_\_\_
   2. **I\_\_\_\_\_\_\_\_\_\_\_\_**
      1. L\_\_\_\_\_\_\_\_\_\_, more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ behaviors
      2. May have to be m\_\_\_\_\_\_\_\_\_\_\_\_\_ or i\_\_\_\_\_\_\_\_\_\_\_\_\_\_
         1. M\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is learning through watching/mimicking
         2. I\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is activating an instinct through getting exposed to the right stimulus at the right time—early on in development
         3. If the instinct isn’t primed, it may not develop correctly
      3. Evidence against e\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because they must work the first time in order for an organism to survive
      4. **M\_\_\_\_\_\_\_\_\_\_ Rituals**
      5. **M\_\_\_\_\_\_\_\_\_\_\_\_\_**
      6. Protection/Defense
         1. Animals release **p\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** that mark their territory or signal danger
         2. These are understood by other animals of the same species
      7. Aggression/Attack
      8. Hibernation
      9. Hunting/Eating
      10. Learning to s\_\_\_\_\_\_ or f\_\_\_\_\_\_\_ (imprinting)
      11. Bird \_\_\_\_\_\_\_\_\_\_\_/Communication (imprinting)
2. **L\_\_\_\_\_\_\_\_\_\_\_\_ Behavior**
   1. **\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_** (squirrels cracking various nuts)
   2. Taught by \_\_\_\_\_\_\_\_\_\_\_\_\_ or c\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      1. Otters being “taught” to swim by their mothers
      2. Bear cubs learning to hunt/eat a fish by their mothers
      3. Young male lions taught to hunt as pack animals
   3. “\_\_\_\_\_\_\_\_\_\_\_” your pets do
      1. A fish coming to the surface for food sprinkles
      2. Dog \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_—hunting, herding, rescuing, tracing
      3. Limited by an animal’s physical and \_\_\_\_\_\_\_\_\_\_\_\_\_ abilities
3. **I\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Behavior**
   1. Learning from m\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (the whale game with the dead fish)
      1. Modeling is learned from watching others in the community, and reasoning about it; or from humans
   2. Using signals/language for c\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ purposes (baboons during war)
   3. Making \_\_\_\_\_\_\_\_\_ for a purpose (raccoons scraping a rock to get into your attic)
   4. P\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_: how to scale something, trap something, get out of a bad situation
   5. Taught by human capacity
      1. Dog training for the blind
      2. A gorilla using sign language with a researcher
      3. “Smart” animals: raccoons, dogs, cats, horses, dolphins
4. Animal R\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Some animals have forms of\_\_\_\_\_\_\_\_\_\_\_\_\_\_reproduction (cloning, no mate required, no egg cell, etc)
   2. Almost all perform\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reproduction
   3. **F\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Process
      1. 4 Haploid reproductive cells are produced by Meiosis (n- half the needed chromosomes)
      2. Two haploid **g\_\_\_\_\_\_\_\_\_\_\_\_** (sperm or egg) unite to form a diploid **z\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (2n)
      3. Z\_\_\_\_\_\_\_\_\_\_\_\_\_ then divides by \_\_\_\_\_\_\_\_\_\_\_ many times to produce the offspring
         1. Gametes contain or receive the chromosomes for inheritance/variety (remember the Punnett Square!)
      4. Characteristics of Gametes
         1. Eggs (**\_\_\_\_\_\_\_**) found in **\_\_\_\_\_\_\_\_\_\_\_\_**; cannot move itself easily
         2. **S\_\_\_\_\_\_\_\_\_\_\_** are found in **\_\_\_\_\_\_\_\_\_\_\_\_\_**; move easily to find the egg, usually with \_f\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. F\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Type
      1. **E\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
         1. Egg and sperm meet \_\_\_\_\_\_\_\_\_\_\_\_\_ in the environment somehow—usually in \_\_\_\_\_\_\_\_\_\_\_\_\_
            1. fish eggs are \_\_\_\_\_\_\_\_\_ to receive sperm from outside (kind of like pollen finding new stigmas)
         2. Usually \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers of eggs and sperm are produced because only a fraction will get fertilized and survive
      2. **I\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
         1. Egg and sperm meet \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the female’s body and produce fertilized eggs that will develop into a baby offspring
         2. Fertilized eggs may be laid, and protected (**o\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**)
            1. Laid eggs are **i\_\_\_\_\_\_\_\_\_\_\_\_\_** to keep warm
            2. Most Birds, Reptiles, Amphibians, Sharks, Platypus
            3. Some sit on them (\_\_\_\_\_\_\_\_\_\_\_\_\_) and some cover them up (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
            4. some leave them, and some turn them
         3. Or Eggs grown inside a female’s body form a **\_\_\_\_\_\_\_\_\_\_\_\_\_** which leads to a live birth (**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**)
         4. Anatomy of an egg
            1. **Y\_\_\_\_\_\_\_\_\_\_** (stored food)
            2. **N\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (forms the zygote after fertilization; contains the genetic material)
            3. **A\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (white; stores vitamins and minerals)
            4. Eggshell (is \_\_\_\_\_\_\_\_\_\_\_\_\_ for air to come through)
         5. The **\_\_\_\_\_\_\_\_\_\_\_\_\_** attaches the embryo to the **\_\_\_\_\_\_\_\_\_\_\_\_** during pregnancy
            1. Delivers o\_\_\_\_\_\_\_\_\_, nutrients; and gets rid of waste
            2. F\_\_\_\_\_\_\_\_\_\_ the offspring through the **umbilical cord**
            3. protects the offspring through the **\_\_\_\_\_\_\_\_\_\_\_\_ sac/fluid**
         6. Usually only a small number of offspring are produced, sometimes only \_\_\_\_\_\_\_\_
   5. Reproductive Balance
      1. The length of **g\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** differs depending on the amount of development needed to survive outside the womb and how many offspring a species needs to reproduce
         1. Most species keep their numbers in check by reproduction/survival rates naturally
            1. Mice, rabbits have millions of babies, quickly because they are at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the animal food chain
            2. Elephants have one baby, after a \_\_\_\_\_\_\_\_\_ time because they live long, are near the top of the food chain, and require a lot of baby care by the pack
      2. Many adult animals \_\_\_\_\_\_\_ after the reproduction process is complete.
         1. fish, drones, male spiders…
      3. Many adult animals have very elaborate mating rituals, pregnancy care, parenting skills
         1. Birds have elaborate dances, \_\_\_\_\_\_\_\_\_\_\_ behavior, to get mates
         2. Fertile females may exhibit s\_\_\_\_\_\_\_\_\_\_, b\_\_\_\_\_\_\_\_\_\_\_, o\_\_\_\_\_\_\_\_, or other things that signal they are ready to mate
         3. Some s\_\_\_\_\_\_\_\_\_\_\_ their babies or eggs to protect them
         4. Some physically c\_\_\_\_\_\_\_\_\_ their babies for a long time
         5. M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ give birth to embryos early and then incubate them in pouches
         6. Many adult parents \_\_\_\_\_\_\_\_\_\_\_\_\_\_ their offspring at some point between egg-formation and just after birth—depends on the amount of imprinting required and the amount of mobility from predators required just after birth
         7. Some parents \_\_\_\_\_\_\_\_\_\_ their offspring if they see them as competitors, or will kill one of them if a twin or triplet is produced
            1. Pandas, wildcats

Ch.15 Applied Knowledge Questions

Say whether the following is a reflex, instinct, learned behavior, or intelligent behavior:

* Your dog growls at you when you reach for its food bowl while it is eating
* Your cat pounces on a flicked pom-pom ball
* Your dog whines to get out
* Your cat’s ear twitches when it hears a funny noise
* Your pet raccoon bangs at its hutch door with a wood chip when it wants out
* Your dog comes to get you when the toddler is crying in his crib
* Your horse comes to the barn door to look out when it is dinner time
* Your cat rubs against the cabinet door where its treats are stored
* Your dog starts to pant when he is hot
* Your hamster runs in his hamster wheel when he is bored

1. How do ants use pheromones?
2. Explain the main differences between a zygote, embryo, and gamete
3. Would you expect an animal that produces one offspring at a time to provide more or less care for its offspring that produces a hundred offspring at a time? Why?
4. Describe two animals that have interesting ways of caring for their young, either before or after birth. If possible, explain why they do that.
5. Explain how you could find out whether an animal’s behavior is an instinct or a learned behavior.
6. How is migrating beneficial to the animal that migrates?
7. What is the problem with the evolutionary view that animals’ instincts evolved over long amounts of time?
8. Why does tool-making indicate intelligent behavior?
9. How are incubation and gestation similar? How are they different?
10. What would be wrong about incubating eggs in warm water?
11. What are the advantages and disadvantages of fish spawning?
12. What factor influences the amount an individual offspring is developed at the time of birth?