Name: _____ Class: _____ Date: _____

chapter 2

1. Is culture among chimpanzees *cumulative*?

    a. yes, because chimpanzees use mentalizing as much as humans
    b. yes, because chimpanzees have excellent working memory
    c. no, because chimpanzees are incapable of cultural transmission
    d. no, because chimpanzees are a nonsocial species
    e. no, because chimpanzees perform poorly when it comes to imitative learning

2. Which of the following provides evidence of culture in nonhuman animals?

    a. Nonhuman primates use symbolic coding.
    b. Killer whales show mentalizing abilities.
    c. Chimpanzees show prestige bias, similar to humans.
    d. Chimpanzees show good emulative learning compared with humans, and each subsequent generation of chimpanzees shows better emulative learning than the previous generation.
    e. There are behaviors that are common in chimpanzees in one location but absent from chimpanzees in another location.

3. If a child wants to be a great basketball player and chooses to learn from LeBron James as a prestigious model, what aspect(s) of James is the child most likely to imitate, according to the prestige bias?

    a. LeBron James's playing style during a basketball game
    b. LeBron James's choice of sneakers when he plays
    c. idolizing the same person LeBron James idolized as a child
    d. LeBron James's off-court workout program
    e. everything that LeBron James does, both related and unrelated to basketball

4. Which of the following best explains both prestige bias and similarity bias?

    a. Humans frequently engage in emulative learning.
    b. Humans just love to learn.
    c. Humans frequently engage in imitative learning.
    d. Humans have large neocortices.
    e. Humans have a small encephalization quotient.

5. According to prestige bias, humans will tend to

    a. imitate another person who has skills and is highly respected, but only for the domain in which that person has talent.
    b. imitate another person who has skills and is highly respected, regardless of whether the domain of imitation is relevant to that person's talent.
    c. emulate another person who has skills and is highly respected, but only for the domain in which that person has talent.
    d. emulate another person who has skills and is highly respected, regardless of whether the domain of emulation is relevant to that person's talent.
    e. imitate people who are talented and emulate people who are not talented.

6. What is the difference between prestige bias and similarity bias?

    a. Prestige bias focuses on others who are highly respected, and similarity bias focuses on others who are not highly respected.
    b. Similarity bias focuses on others who are highly respected, and prestige bias focuses on others who are not highly respected.
    c. Prestige bias focuses on others who are highly respected, and similarity bias focuses on others who are similar to ourselves.
    d. Similarity bias focuses on others who are highly respected, and prestige bias focuses on others who are similar to ourselves.
    e. Prestige bias focuses on others who make the most money, and similarity bias focuses on others who are similar to our favorite celebrities.

7. Brent visits a new restaurant and notices that almost all the other customers ordered an appetizer dish that comes on a sizzling platter. Only one table ordered an appetizer that didn't come on a sizzling platter. When the waiter comers to take Brent's order, what will he choose, according to conformist transmission?

    a. an appetizer dish that does not come on a sizzling platter
    b. an appetizer dish that comes on a sizzling platter
    c. two appetizers: one on a sizzling platter and one not on a sizzling platter
    d. a main dish not on a sizzling platter and no appetizers.
    e. a main dish on a sizzling platter and no appetizers.

8. How does similarity bias compare to conformist transmission?

    a. Both focus on learning from similar others.
    b. Both assume it is better to learn from a highly respected source.
    c. Only conformist transmission focuses on how common a behavior is in a group of people.
    d. Only similarity bias involves learning from others.
    e. Neither involves imitation.

9. Imitative learning is best defined as

    a. cultural learning.
    b. requiring internalization of the model's goals.
    c. figuring out how to use an object to change the state of the environment.
    d. attending to relevant steps in a process.
    e. copying the parts of a model's behavior that the learner likes best.

10. A team of scientists observes that a new species (Species X) tends not to copy exactly how a model uses a new tool; instead, species members are very adept at figuring out on their own how to best use the tool. Conversely, another new species (Species Y) does tend to copy exactly how a model uses a new tool, paying attention to the model's behavioral strategies. Based on this observation, what trajectory should we expect each species' respective cultural development to be like?

a. Species X will likely not have cumulative culture and Species Y will likely have cumulative culture.
b. Species X will likely have cumulative culture and Species Y will likely not have cumulative culture.
c. Both species will likely have cumulative culture.
d. Neither species will likely have cumulative culture.
e. The scientists' observations have no relationship to accumulation of culture.

11. Homer sharpens a rock and uses it to shave. Schick adds a handle to the rock for better grip. Gillette then changes the rock to a titanium blade for durability. The progression of improvements made to the shaving utensil is an example of

a. cultural adaptation.
b. cultural bootstrapping.
c. emulative learning.
d. the ratchet effect.
e. the eureka effect.

12. Which of the following children demonstrates mentalizing?

a. a child who hides his toys so his mother will not find them
b. a child who likes to ride the family dog like a rodeo bull
c. a child who assumes that everyone knows everything she knows
d. a child who first watches her brother turn the doorknob gently to open the closet and then pulls the doorknob as hard as she can to force the closet door open
e. a child who spends a long time deciding between two outfits in the morning

13. An infant of Species X sees a model use a new tool to achieve a goal. Which of the following scenarios best demonstrates that the infant is engaging in emulative learning?

a. The infant tries to determine the model's intent in using the tool in a specific way.
b. The infant tries to determine what the model liked best about the tool.

c. When given the tool, the infant figures out on her own how to use the tool to achieve the same goal.
d. When given the tool, the infant mimics exactly how the model used the tool to achieve the goal.
e. The infant stares blankly at the model.

14. An infant of Species X sees a model use a new tool to achieve a goal. Which of the following demonstrates that the infant is engaging in imitative learning?

a. When given the tool, the infant figures out on his own how to use the tool to achieve the same goal.
b. The infant tries to determine which of the model's actions was most relevant in using the new tool to achieve the goal.
c. When given the tool, the infant mimics exactly how the model used the tool.
d. The infant stares blankly at the model.
e. The infant tries to determine what it is about the tool that allowed the model to achieve the goal.

15. Which of the following statements is true regarding chimpanzees living in the wild?

a. They show less evidence of mentalizing than chimpanzees that have been raised with humans.
b. They communicate with a vocabulary of about 60 recognizable words.
c. They bring others to locations so that they can observe things there.
d. They are able to imagine others' intentions, just like chimps raised with humans.
e. They do not show emulative learning abilities.

16. Emulative and imitative learning can be contrasted in that

a. in the short term, imitative learning leads to better solutions than emulative learning.
b. chimpanzees can perform well at tasks involving imitative learning, but not at tasks involving emulative learning.
c. emulative learning does not require imitating a model's behavioral strategies.

d. emulative learning is a necessary precondition for cultural accumulation.
e. 2-year-old children tend to solve tasks with emulative learning of behavioral strategies, whereas 1-year-olds do not.

17. A child observes a model using a new tool to crack open an acorn. The child does not copy exactly what the model does, nor does he understand that the model wanted to crack acorns. The child simply sees that the tool can be used to crack acorns and tries to figure out on his own how to use the tool for that purpose. What is the child exhibiting?

a. simple mimicry
b. theory of mind
c. observational learning
d. imitative learning
e. emulative learning

18. Which of the following best describes mentalizing?

a. considering other people's goals
b. thinking about what someone else might want
c. thinking about what someone's preferences are
d. being able to understand other people's intentions for their behavior
e. all of the above

19. Pavel teaches his daughter to brush her teeth by having her watch him as he brushes his and telling her, "First, you hold your toothbrush in one hand. Second, you put a little bit of toothpaste on the brush. Third, you wet the toothbrush and put it in your mouth. Last, you move the brush in a circular motion to clean your teeth." Which of the following describes the method Pavel is using to teach his daughter?

a. scaffolding
b. the ratchet effect
c. emulation
d. conformist transmission
e. mentalizing

20. Which of the following is true about scaffolding?

    a. It occurs more commonly in WEIRD societies than in East Asian societies.
    b. It is more explicitly communicated in small-scale societies than in WEIRD societies.
    c. It involves teaching the complexity of the task by listing as many steps as possible.
    d. It can be demonstrated indirectly or communicated explicitly.
    e. It involves both prestige bias and similarity bias.

21. Which of the following (historically inaccurate) examples best demonstrates the process of the ratchet effect?

    a. Kesha brushes her teeth with a bottle of whiskey, but Lady Gaga gives her a tube of toothpaste because it cleans teeth better.
    b. Wolverine and Thor independently create the first hammers. Wolverine's hammer is simply a rock, whereas Thor's hammer has a metal head and a long handle.
    c. Serena Williams demonstrates how to use a tennis racquet to hit a ball, and everyone then tries to figure out how the racquet can be used to hit a ball.
    d. Marx creates a new political ideology, Lenin builds on that ideology, and Stalin further expands on it.
    e. Tiger Woods demonstrates how to use a golf club to hit a ball, and everyone mimics Tiger's movements with his or her golf club.

22. A small handful of engineers have decided to leave their original, larger group of engineers to start their own company in a location that is very isolated from outside influence. According to Henrich's mathematical model, what will be the likely trajectory of technology produced by this group?

    a. cultural technology that is the same as the larger group
    b. more advanced cultural technology that ratcheted up from increased group cohesion among this isolated group
    c. more advanced cultural technology that is entirely unique from the technology of the original group of engineers
    d. deteriorated cultural technology because of a lack of skilled models in the isolated group
    e. drastically deteriorated cultural technology because of intense relational conflicts in small groups

23. According to Henrich's (2004) mathematical model, what happened to cultural knowledge in the case of eighteenth-century Tasmania?

    a. Cultural knowledge initially deteriorated due to an influx of outsiders into the population that diluted it; however, cultural knowledge later increased from population diversity.
    b. Cultural knowledge deteriorated due to malnutrition, which reduced the neocortex ratio.
    c. Cultural knowledge deteriorated due to immigration, which created confusion as to what qualified as cultural knowledge.
    d. Cultural knowledge deteriorated because of population shrinkage, which led to a lack of skilled models for people to copy.
    e. Cultural knowledge initially increased due to immigration and population diversity; however, it later deteriorated because it is in the nature of cultural evolution that some cultural ideas fall out of favor in time.

24. Kaya is working on a science fair project to create a windmill. She has a choice between

    joining Group A, with 11 other members, or Group B, with 2 other members. The group that

    creates the best windmill will receive a prize. According to research on cultural

    accumulation, which group should she join to get the best chance of winning the prize?

    a. Group A, because there will be a larger number of models to ensure there is a talented member to imitate
    b. Group A, because members of the group can divide up responsibilities and each make a small part of the windmill very well
    c. Group A, because competition among group members will motivate each individual to create a better windmill
    d. Group B, because there will be less chance of fighting among group members
    e. Group B, because free riding is more common in larger groups

25. Which of the following is true regarding gene-culture coevolution?

a. It describes how culture shapes the evolution of genes.
b. It describes how genes shape the evolution of culture.
c. It distinguishes the evolution of humans from the evolution of other species.
d. It explains how culture and genes interact over time: Humans have genetically evolved behaviors that contribute to cultural practices, and cultural practices also evolve over time and can influence genetic evolution.
e. All of the above are correct.

26. The encephalization quotient (EQ) is defined as

a. an animal's brain weight.
b. an animal's body mass.
c. neocortex volume.
d. an animal's brain weight relative to the predicted brain weight for a comparable animal of the same body size.
e. the ratio of an animal's neocortex volume relative to the volume of the rest of the brain.

27. How does one find an animal's encephalization quotient (EQ)?

a. It is a complex conversion from an animal's intelligence quotient.
b. It is the ratio of an animal's brain weight to the brain weight predicted for a comparable animal with the same body size.
c. It is the ratio of an animal's brain weight to its body size.
d. It is the ratio of the volume of an animal's neocortex to the volume of its brain.
e. It is the difference between the volume of an animal's brain and the volume of its neocortex.

28. Among three newly discovered species of primates, Species A's diet is based fully on fruits, Species B's diet is based fully on food that requires extractive foraging methods, and Species C lives in highly social complex groups. Which species probably has the largest encephalization quotient (EQ)?

a. Species A
b. Species B

c. Species C
d. All three species probably have the same EQ.
e. The answer cannot be determined from the available information.

29. After studying four species of Martian animals that have the same body size, the scientists obtained the following data:

Species	Brain weight (g)	Neocortex volume (cm^3)
A	120	120
B	86	23
C	134	67
D	95	125

Which species has the largest encephalization quotient (EQ)? (No calculator is needed.)

a. A
b. B
c. C
d. D
e. The answer cannot be determined from the available data.

30. On Planet X, you observe that a primate-like species is undergoing rapid evolution, with their brains having grown significantly in volume. Based on the textbook's discussion about a similar process that took place in human evolution, what physiological changes to this alien species would you expect to accompany this growth in brain volume? Assume that body size has not changed.

a. increased muscle mass
b. shorter fingers and limbs
c. increased energetic demands elsewhere on the body
d. increased encephalization quotient
e. lengthened digestive tract

31. A 2.5-year-old human child, a chimpanzee, and an orangutan are presented with the same problem-solving task: they must figure out how to use a tool to reach the top of a cabinet and nudge a wooden block that will knock over a banana. Based on the findings of Herrmann and colleagues (2007), which of the three participants will outperform the others?

a. the human child
b. the chimpanzee
c. the orangutan
d. None will be able to complete the task.
e. There will be no significant difference in performance across the three participants.

32. After studying four species of newly discovered primates that have the same body size, the scientists obtained the following data:

Species	Brain volume without neocortex (cm^3)	Brain surface area (cm^2)	Neocortex volume (cm^3)
A	80	120	90
B	25	86	84
C	66	134	67
D	22	95	84

Rank order the species by their expected social group size, from greatest to smallest, according to the social brain hypothesis. (No calculator is needed.)

a. D, B, A, C
b. A, B, D, C
c. C, A, B, D
d. B, D, A, C
e. The answer cannot be determined from the available data.

33. You examine four newly discovered primate species that have the same body size and obtain the following data:

Species	Brain volume without neocortex (cm^3)	Brain weight (g)	Neocortex volume (cm^3)
A	80	120	90
B	25	95	84
C	66	70	67
D	22	86	84

Based on these observations, what can you reasonably infer?

a. Species B has the largest encephalization quotient.
b. Species C deals with the highest levels of social complexity.
c. Species D and C have, respectively, the largest and the smallest neocortex ratios.
d. Species A has the largest neocortex ratio.
e. Species B and D have the same neocortex ratio.

34. Which of the following is direct evidence for the social brain hypothesis?

a. Humans outperform other primates in physical problem-solving tasks.
b. Species of whales and birds that are more social have smaller brains.
c. Humans have a large encephalization quotient.
d. Animals that are more social have fewer cognitive skills.
e. As predicted by the neocortex ratio, the average human social group size in subsistence societies is around 150 members.

35. Which of the following statements is FALSE?

a. Primate species that rely heavily on fruit in their diets have larger neocortex ratios than primate species that do not rely much on fruit.
b. Primates have larger brains as a function of their body weight than most other mammals.
c. Primate species with large social networks have larger neocortex ratios than those with smaller social networks.
d. Human brains require more caloric energy than the brains of most other species.
e. All of the statements are true.

36. What is the main cost to humans for having large brains?

a. Larger brains use less of the body's total metabolism than small brains.
b. Large brains require large skulls.
c. Large brains require an enormous amount of energy to function.
d. Humans have become more sedentary and consume fewer calories due to having large brains.
e. Humans' brains constitute nearly 20% of their body weight, making neck pain a persistent problem.

37. What theory is best supported to explain why primates evolved such large brains?

a. They tend to eat foods that are rich in protein, which can support expansive neural development.
b. They tend to eat fruit and need to be clever enough to remember where the fruit trees were that would be ripe at each point in the season.
c. They tend to eat foods that require ingenuity to extract, such as nuts and termites.
d. They tend to live in large social groups, which requires intelligence to function effectively.
e. The number of males and females is unequal, so individuals need to outsmart their competitors to attract mates.

38. After measuring the neocortex ratio of two species, it was determined that Species A has a ratio of 0.25, whereas Species B has a ratio of 0.20. Based on the evidence discussed in the textbook, which of the following can one most likely conclude about these two species?

a. Species A's diet contains more fruit than Species B's diet.
b. Species B has higher intelligence than Species A.
c. Species A uses more extractive techniques to get food than Species B.
d. Species B lives in a smaller social group than Species A.
e. Species A has a larger brain relative to its body size than Species B.

39. According to Dunbar (1993), why would larger social groups be associated with the evolution of larger brains?

a. Larger groups provided more protection for survival, which allowed for the evolution of larger brains.
b. Smaller groups tended to be too cohesive and unwilling to adopt new ideas, leading to stagnant brain evolution.
c. Smaller groups were more vulnerable to predation and defeat in warfare, preventing the evolution of larger brains.
d. Larger groups were more successful in hunting, and the additional food led to the evolution of larger brains.
e. Larger groups had greater social complexity, which drove the evolution of larger brains to handle this increase.

40. According to the social brain hypothesis, which of the following is true?

a. The large brains of primates allow them to have smaller, tight-knit social groups than humans.
b. Evolution favored primates who did well maintaining social relationships.
c. The neocortex ratio in primates limits population groups to 150 members.
d. People with greater numbers of social relationships are mentally healthier than those with fewer.
e. The neocortex ratio in primates allows for population groups to exceed 150 members.

41. Which of the following is true of the relationship specifically between human brains and group size, according to the social brain hypothesis?

a. Human brain size is not related to group size but rather to humans' diet.
b. The neocortex ratio in humans gives them the capacity to keep track of about 150 relationships.
c. The smaller the group size, the faster the brain deteriorates in old age.
d. Humans with larger brains have an affinity for larger groups.
e. Living in larger social groups tends to lead to larger neocortex ratios.

42. Scientists studying four species of Neptunian animals obtained the following data:

Species	Brain volume without neocortex (cm^3)	Neocortex volume (cm^3)

A	45	90
B	80	84
C	20	67
D	82	84

According to Dunbar's social brain hypothesis, which species should have the largest social groups? (No calculator is needed.)

a. A
b. B
c. C
d. D
e. The answer cannot be determined from the available data.

43. Which of the following is true about the cognitive skills of a 2.5-year-old human child compared to a chimpanzee and an orangutan?

a. The child will likely outperform the chimpanzee and orangutan on physical problem-solving tasks but not social problem-solving tasks.
b. The child will likely outperform the chimpanzee and orangutan on social problem-solving tasks but not physical problem-solving tasks.
c. The child will likely outperform the chimpanzee and orangutan on both physical problem-solving tasks and social problem-solving tasks.
d. The child will likely perform about the same as the chimpanzee and orangutan on both physical problem-solving tasks and social problem-solving tasks.
e. The child will likely perform worse than the chimpanzee and orangutan on both physical problem-solving tasks and social problem-solving tasks.

44. What is a critique of the social brain hypothesis?

a. Comparisons of neocortex ratios across primate species go against the social brain hypothesis.
b. Comparisons of the encephalization quotient across primate species go against the social brain hypothesis.

c. Research on the diets of humans compared to other species of primates is more strongly supported than to the social brain hypothesis.
d. Evidence supporting the social brain hypothesis is limited to humans and does not extend to other species of primates.
e. The social brain hypothesis predicts that group living is beneficial to primates but it doesn't explain why.

45. Faye Han is a famous YouTuber who begins copying the mannerisms of another famous YouTuber, Trish Linh. Design a study that tests whether Faye is copying Trish due to prestige bias or similarity bias.

46. You are trying to determine whether Mimi, a young child, engages primarily in imitative or emulative learning. Design a study that will allow you to figure it out.

47. Define the ratchet effect and generate an example of it (excluding the example of the hammer in the textbook).

48. Imagine that three teams are tasked with building a windmill. One team has 3 people, one has 6 people, and one has 12 people. All teams saw an example of a windmill and then worked to reproduce the windmill and improve on it. Draw a figure that represents approximately how well each of these teams would perform on this task, relative to the other teams, after 15 trials.

49. Define the social brain hypothesis, and generate a study design that tests this hypothesis.

50. David posits that, because nuts require ingenuity to harvest them, animals that rely on a diet of nuts will require more complexity in mental abilities, thus leading to the evolution of a larger brain. Evaluate whether David's assertion makes sense based on existing evidence.

51. You measured the brain of an animal species and found that it was 30 cm^3. The brain itself weighs 40 grams. You want to artificially enhance the mean group size for this animal species. What part(s) of the brain would need to increase or decrease, and why?

Answer Key

chapter 2

1. Answer: E
2. Answer: E
3. Answer: E
4. Answer: C
5. Answer: B
6. Answer: C
7. Answer: B
8. Answer: C
9. Answer: B
10. Answer: A
11. Answer: E
12. Answer: A
13. Answer: C
14. Answer: C
15. Answer: A
16. Answer: C
17. Answer: C
18. Answer: E
19. Answer: A
20. Answer: D

21. Answer: D

22. Answer: D

23. Answer: D

24. Answer: A

25. Answer: E

26. Answer: D

27. Answer: B

28. Answer: C

29. Answer: C

30. Answer: D

31. Answer: E

32. Answer: A

33. Answer: C

34. Answer: E

35. Answer: A

36. Answer: C

37. Answer: D

38. Answer: D

39. Answer: E

40. Answer: B

41. Answer: B

42. Answer: A

43. Answer: B

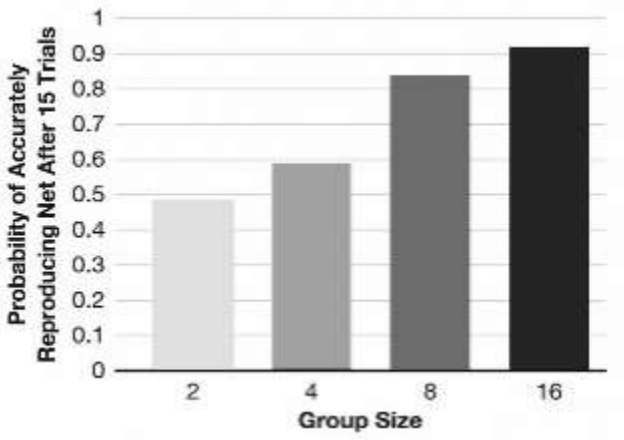
44. Answer: E

45. Answer: Answers will vary.

46. Answer: Answers will vary.

47. Answer: Answers will vary.

48. Answer: Students' figures should look similar to Figure 2.6 from the textbook.



49. Answer: Answers will vary.

50. Answer: Answers will vary.

51. Answer: Neocortex