Quiz #5
Name: _____

1. Name two heuristics we studied, and describe a hypothetical example of someone making an error in judgment when using each of those heuristics. [2 pt; DM Day 2]

2. "If it is the last day of class (LDOC), all Duke students are drunk." Based on the above statement, please evaluate the *deductive inferences* below, by labeling each one as either valid or invalid. [2 pts; DM Day 3]

_____ *"It is LDOC; therefore all Duke students are drunk"*
_____ *"Not all Duke students are drunk; therefore, it is not LDOC"*
_____ *"All Duke students are drunk; therefore, it is LDOC"*
_____ *"It is not LDOC; therefore, not all Duke students are drunk"*

3. One of our section themes was about how we can change people's minds. Draw on your readings, podcasts/other SciComm articles, and class discussions to describe two distinct findings about what psychology suggests is the answer to this question [2 pts; DM Day 2]

4. One of our class activities focused on applying the decision-making research that we discussed over the course of three days to Science Communication. Describe one concrete application of the research to how you approach Science Communication [1 pt; DM Day 3]

5. We can reduce errors in eyewitness testimony by doing all of the following EXCEPT [1 pt; False Memory]
   A. Using a sequential line-up instead of a simultaneous line-up, since a simultaneous line-up encourages eyewitness to make relative judgments
   B. Ensuring that the individual administering the line-up does not know if the suspect is in the line-up, preventing the likelihood of confirmation feedback bolstering eyewitness confidence
   C. Pointing out that someone who looks familiar is likely familiar for a reason, irrespective of whether you actually know why they look familiar
   D. Informing the witness that the suspect may or may not be in the line-up and including people who look similar to the suspect so that there will be fewer misidentification errors of innocent people

6. Which of the following statements on studying false memory is NOT true? [1 pt; False Memory]
   A. Researchers can study false memory by presenting participants with a list of words that are semantically related and then look for whether participants added in non-studied words that are thematically consistent with the others
   B. Researchers can study false memory by testing whether participants notice details inconsistent with an older memory (e.g., childhood) and suggestively questioning participants about what they witnessed
   C. Researchers can study false memory by investigating the conditions under which participants might witness a crime or be subjected to as suspects, such as sleep deprivation and highly arousing scenarios
   D. Researchers can study false memory by taking participants to the scene of a new memory they hope to implant and asking them whether they've been there before

7. Compare and contrast what the Pennycook and Rand (2018) (lazy, not motivated reasoning), Fazio et al. (2015) (illusory truth), Grinberg et al. (2019) (fake news on twitter) and Vosoughi et al. (2018) (spread of true and false news) papers suggest to us about misinformation. What makes misinformation spread or makes people believe in misinformation? Give at least two examples. [2 pt; Misinformation]

8. We've read about some suggestions for how to combat misinformation, via Lazer et al. (2018) (scientists summarizing psychology of fake news) and Lombrozo (2018) (interview with one of those scientists). What is one concrete suggestion made for how to combat misinformation? [1 pt; Misinformation]

Quiz #4
Name: _____

1. Describe two explicit effects or trends that we went over in class or in the papers that you read that are consistent with the idea that memory is a constructive process. What does it mean for memory to be constructive, and what are two effects/trends that point to its constructive nature? [2 pt; LTM processes/Autobiographical Memory]

2. Which of the following about proposed explanations for the reminiscence bump is NOT accurate? [1 pt; Autobiographical Memory]

A. The self-image hypothesis suggests that the reminiscence bump occurs because assuming our identities will lead to enhanced memory.
B. The cognitive hypothesis suggests that the reminiscence bump occurs because encoding is enhanced during periods of rapid change that are followed by stability.
C. The narrative rehearsal hypothesis suggests that the reminiscence bump occurs because the repeated viewing or rehearsal of events through media such as television promotes greater recall.
D. The cultural life script hypothesis suggests that the reminiscence bump occurs because our life stories are easier to remember when they fit with cultural expectations.

3. What is one difference between the behavior who have highly superior and severely deficient autobiographical memory? [1 pt; Autobiographical Memory]

4. Which of the following statements about proposed approaches to categorizing items is NOT accurate? [1 pt; Categorization/Knowledge]

A. High-prototypicality items are responded to more quickly than low-prototypicality items, most likely due to priming.
B. Determining an item's category membership can allow you to make inferences about that item's other characteristics without having to observe those characteristics yourself.
C. The definitional approach is not likely to be used, because it is too strict to map onto the real world.
D. Exemplar categorization probably tends to occur for categories with many members, whereas prototype categorization probably occurs for categories with fewer members.

5. Pick a category of objects. Describe one difference between how a semantic category network approach and a connectionist model approach would represent the stored knowledge [1 pt; Categorization / Knowledge].

6. Describe what expected utility theory predicts and two explicit effects or trends that we went over in class or that were in the papers you read that are inconsistent with people acting in line with an expected utility theory. [2 pt; Decision-making]

7. Check **all** the statements that are **true** about the findings of Pearson et al. (2018) (crimes), Rubin et al. (2019) (scenes), Stanley et al. (2017) (counterfactuals), and Pryor et al. (2019) (norms) [2 pt; readings]

A. Pearson et al. (2018) suggests that innocent until proven guilty is not entirely accurate because of the cognitive biases that we hold about crimes of different severity.
B. Pryor et al. (2019) suggests that people follow arbitrary norms because they use the percentage of people who are similarly-minded as an anchor to guide their hypothetical decisions on reporting / not reporting a robber.
C. Stanley et al. (2017) suggests that counterfactual simulations of negative autobiographical memories had no effect on their emotional intensity.
D. Rubin et al. (2019) suggests that all the qualities we typically associate with autobiographical memory, such as reliving, vividness, and belief, are due, in large part, to our ability to imagine the spatial layout of the scene being recalled.

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Quiz 3
Name: _____

1. Of the following two excerpts, which corresponds to the opening paragraph of a science news article and which corresponds to the opening paragraph of a scientist summary or perspective article? When identifying the identity of each excerpt, make sure to give at least

two concrete examples for *why* you think that is the identity of the piece. [2 pts; Science Communication]

Excerpt 1 (Source 1):
One of the most deep-seated misconceptions about the human psyche is that men are simple and women are complicated (***1***). Gender psychology scholars trace this belief back to at least the 19th century, when the long-standing view that women were inferior versions of men started to fall out of favor (***2***). In response, biological theories on the sexes were restructured into a narrative that characterized the emergent psychological properties of the female brain—"sensitivity, perceptual acumen, and emotionality"—as not lesser than, but complementary to, those of men's brains (***1***). This framed women as a disordered, unstable yin to men's rational, orderly yang, thus preserving the patriarchy. So-called scientific explanations of why women's mental proclivities deviated from men's relied heavily on the purported influence of reproductive physiology on the female mind (***3***). More than 100 years later, this idea still shapes not just how society perceives women but also how biomedical scientists approach animal research.

Excerpt 2 (Source 2):
The male mind is rational and orderly while the female one is complicated and hormonal. It is a stereotype that has skewed decades of neuroscience research towards using almost exclusively male mice and other laboratory animals, according to a new study.

Scientists have typically justified excluding female animals from experiments – even when studying conditions that are more likely to affect women – on the basis that fluctuating hormones would render the results uninterpretable. However, according to Rebecca Shansky, a neuroscientist at Northeastern University, in Boston, it is entirely unjustified by scientific evidence, which shows that, if anything, the hormones and behaviour of male rodents are less stable than those of females.

2. You are a developmental researcher and hypothesize that 1-year olds are capable of detecting semantic violations in spoken language. In your experiment, you are recording EEG from 1-year olds who are seated in front of two speakers (left and right) that alternately play spoken sentences. The left speaker plays regular sentences while the right speaker plays sentences entailing semantic violations. Which of the following findings would support your hypothesis? [1 pt; Language]

A. The infants spend more time orienting toward the left than toward the right speaker, and they display a suppressed N400 ERP to the semantic violations
B. The infants attend equally to both speakers but show a larger N400 ERP to the semantic violations
C. The infants spend more time orienting toward the right than toward the left speaker, and they display an enhanced N400 ERP to the regular sentences compared to the semantic violations
D. The infants spend more time orienting toward the right than toward the left speaker, and they display an enhanced N400 ERP to the semantic violations

3. During our discussion on language, we went over several examples of how context might affect the processing and perception of language. Describe two behavioral effects and what role context plays [2 pt; Language].

4. Based on the findings of Bergelson and Aislin (2017) and Yu et al. (2019) on how 6-month-olds and 9-month-olds understand language, what might you recommend to parents? That is, what can parents do to better help their infants understand what the parents are saying? Point out something directly related to the paper you discuss as evidence for that piece of advice. [1 pt; Language]

5. Compare and contrast Atkinson and Shiffrin's short-term memory model against Baddeley's revised (i.e., later) working memory model. What is different and what is similar? Give at least two concrete examples. [2 pt; Working Memory]

6. If Peyton Manning, a professional football player, wanted to remember his 16-digit credit card number, which of the following memory techniques would you recommend? [1 pt; Working memory]

A. He should think of the numbers as a sequence of football statistics.
B. He should picture each of the numbers in his head printed in a bright color.
C. He should first memorize a few other sequences of 16 digits to gain some practice.
D. He should visualize the front of his credit card showing a picture of him dribbling a basketball.

7. You have administered a word-list (e.g., barricade, trout, etc.) free recall task to a group of normal control subjects and a group of

amnesiacs with MTL lesions. Which of the following statements is most accurate? [1 pt; Working Memory/LTM]

A. The controls will show the best recall for the most recent items on the list, and the worst recall for the earliest items on the list
B. If the controls are distracted between list-learning and recall, they will not demonstrate a recency effect
C. Because of their MTL lesions, amnesiacs will show no recency effect
D. All of the above

8. You are conducting a memory experiment where you manipulate the *level of encoding* of word stimuli. In the "shallow" encoding condition, subjects have to indicate whether words are printed in lower or upper case letters (a non-semantic task), and in the "deep" encoding condition they have to indicate for each word whether it refers to a living or a non-living thing (a semantic task). After this encoding phase, you perform two memory tests: a standard recognition memory test to probe declarative memory, and a stem-completion test to probe for priming (e.g., _S S _ S S _ _). What is the most likely result? [1 pt; LTM]

A. The shallow encoding condition would produce greater declarative memory but less priming effects than the deep encoding condition
B. The shallow encoding condition would produce equal declarative memory as the deep encoding condition but greater priming effects
C. The shallow encoding condition would produce worse declarative memory but greater priming effects than the deep encoding condition
D. The shallow encoding condition would produce worse declarative memory than the deep encoding condition, but priming effects would be about the same for the two conditions

9. You are now cognitive psychology scholars, well versed in memory research. What advice would you give to a Duke freshman on how to study most effectively? Provide at least two concrete tips based off behavioral effects that we discussed in class or were mentioned in either your textbook or academic readings [2 pt; LTM processes].

10. Similarly, now that you know some research on working and long-term memory, how would you apply this research to your Science Communication pieces? Give at least one concrete point based off something different than what you might mention in #9 [1 pt; LTM].

11. We talked on our first day of class about how all models are wrong, but some are useful. Describe two sources of evidence for two different branches in our current model of long-term memory structure, which make this model a useful model of LTM [2 pt; LTM].

Bonus Point—

12. In Bergelson and Aslin (2017), the authors discuss performance differences for 6-month-olds who are asked to identify semantically related and unrelated words. One of the limitations the authors identify is that the performance difference they observe could be the result of two factors: competition or underspecification. The infants could know something about tested words, but couldn't overcome competition between activation of related concepts ("car" leads to looking a car, but also activating 'stroller' to a similar degree, so that means poorer performance), OR the infants could tell apart unrelated vs. related items, but not really know what belongs in particular categories ("car" isn't referring to juice, but is stroller in the "car" category?). How might you tell the difference between the 2 possible explanations in a follow-up experiment? [bonus point; Language]

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Quiz #2
Name: _____

Title: "Hyperscans" Show How Brains Sync as People Interact
Lead: Social neuroscientists ask what happens at the level of neurons when you tell someone a story or a group watches movies
Opening paragraphs: The vast majority of neuroscientific studies contain three elements: a person, a cognitive task and a high-tech machine capable of seeing inside the brain. That simple recipe can produce powerful science. Such studies now routinely yield images that a neuroscientist used to only dream about. They allow researchers to delineate the complex neural machinery that makes sense of sights and sounds, processes language and derives meaning from experience.

But something has been largely missing from these studies: other people. We humans are innately social, yet even social neuroscience, a field explicitly created to explore the neurobiology of human interaction, has not been as social as you would think. Just one example: no one has yet captured the rich complexity of two people's brain activity as they talk together. "We spend our lives having conversation with each other and forging these bonds," neuroscientist Thalia Wheatley of Dartmouth College says. "[Yet] we have very little understanding of how it is people actually connect. We know almost nothing about how minds couple." (From: https://www.scientificamerican.com/article/hyperscans-show-how-brains-sync-as-people-interact/)

1. Describe at least one principle of Science Communication that this headline, lead sentence, and opening paragraph(s) get right and one principle that they get wrong. [2 pt; SciComm]

2. "Perceiving machines" are used by the U.S. Postal service to "read" the addresses on letters and sort them quickly to their correct destinations. Sometimes, these machines cannot read an address, because the writing on the envelope is not sufficiently clear for the machine to match the writing to an example it has stored in memory. Human postal workers are much more successful at reading unclear addresses, most likely because of [1 pt; Perception/Attention]

A. Bottom-up processing
B. Top-down processing
C. Their in-depth understanding of principles of perception
D. Repeated practice at the task

3. Imagine that U.S. lawmakers are considering changing the driving laws and that you have been consulted as an attention expert. Given the principles of divided attention, in which of the following conditions would a person have the most difficulty with driving and therefore pose the biggest safety risk on the road? [1 pt; Attention]

A. When the driver has to drive work early in the morning
B. When the driver is stuck in stop-and-go traffic
C. When the driver has to park in a crowded parking garage
D. When the driver is driving an unfamiliar vehicle that is more difficult to operate

4. With practice, people can become better at a task, which, over time, means performing the task is automatic. Previous research by Schneider and Shiffrin established that "automatic processing" happens without intention and only uses some of a person's cognitive resources. How the switch to "automatic" happens is still being researched, but this is why driving is often considered a (relatively) automatic behavior.

Now let's apply that concept to the papers on attention that you've read. [3 pts; Attention]

A) If you're driving and music is playing, what does the Middlebrooks et al. paper suggest would happen to your driving performance? Now, one limitation of the Middlebrooks paper was that folks were told to ignore the different types of music. What would happen to your cognitive or driving performance if you *couldn't* ignore the music—say, it was an audiobook you've wanted to listen to, and it captures your attention; what then?

B) If you're driving and no one is around, and the next curve in the road isn't for some time, what does the Seli et al. paper (clock) suggest you may do until you reach the next curve? How would you test this?

C) Are any of your hypotheses qualified by the population tested? For instance, would any of your hypotheses depend on certain demographic or psychological characteristics of who was driving?

D) "Life, Interrupted" discussed the idea of "deep work." Let's say that researchers are interested in understanding the different attentional states that might underlie "deep" vs. superficial work. What is one of the two paradigms that you learned about that researchers could use to investigate how people shift their attention between tasks? What behavior might you expect a participant to show?

5. Identify a problem with defining emotion by just one of the four criteria that comprise its main components. Draw on your readings, podcast, and class discussion to give an example of why that criterion cannot define emotion alone. [1 pt; Emotion]

6. First describe what two different theories of emotion predict in terms of how an emotion is generated. Then describe how you might differentiate between these two theories, i.e., what might one theory predict that the other wouldn't? You can draw on your readings, the podcast, or class discussions for this question. [2 pts; Emotion]

7. Describe at least two possible strategies (with concrete examples and definitions) that the Gross model of emotion regulation suggests that someone could take in managing their emotions. [1 pt; Emotion]

8. Which of the below theories is best captured by the following statement: "The bodily response to an emotional stimulus precedes and informs our feelings about the stimulus"? [1 pt; Emotion]

A. Cannon-Bard Theory
B. Psychological Constructive Theory
C. James-Lange Theory
D. All of the above

9. Apply either sparse, population, or specificity coding to one of the topics that we have studied so far, giving specific examples either from class discussions or your readings as to why each behavioral result might be coded in the brain that way. [bonus point; Sensory Coding]

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Quiz #1

Name:

1. HEADLINE: Rewarding gone wrong
   LEAD: Parents and teachers naturally like to reward children at the sight of good behavior; however, rewarding can actually make children stop good behavior all together.

   What is at least one principle of Science Communication that this headline + lead sentence gets right and one principle that they get wrong? [2 pt]

2. The likelihood principle states that [1 pt]
   a. we perceive the object that is most likely to have caused the pattern of stimuli we have received
   b. we perceive size to remain the same size even when objects move to different distances
   c. it is easier to perceive vertical and horizontal orientations
   d. feature detectors are likely to create a clear perception of an object

3. 

Describe one perspective on why we perceive this mug the "wrong" way [1 pt].

4. Name one problem associated with the lack of open science in psychology and one solution for that problem. (1 pt)

5. Research has suggested that some areas of psychology have moved towards larger sample sizes from an online, crowdsourced, somewhat diverse Amazon Mechanical Turk database and away from standard psychology pool subjects or somewhat more diverse community-based samples. What is one problem and benefit that you see associated with this move? (1 pt)

6. You want to find some evidence suggesting that very young, not yet verbal infants understood a particular vocabulary word. Which of the following would be the best measure of their understanding? [1 pt]
    a. You could track where their eyes move: do they fixate on the image that is associated with the word spoken aloud?
    b. You could measure their scalp EEG and see whether they show enhanced processing for the particular words you're interested in vs. non-words.
    c. You could put them in an fMRI scanner to examine whether they'll show enhanced neural processing of words vs. non-words.
    d. You could give them toys that represent the word and see whether they show a preference for the toy word that you're interested in.

7. The main difference between early and late selection models of attention is that in late selection models, selection of stimuli for final processing doesn't occur until the information is analyzed for [1 pt]
    a. Modality (presentation mode, like auditory vs. visual)
    b. Meaning
    c. Physical characteristics
    d. Location

8. Name one effect that we've discussed that would be an example of top-down attention and one effect that would be an example of bottom-up attention. [1 pt]