

Cognitive Psychology: Psychology 40
Claremont McKenna College

Examination 1: Fall 2022

Academic Integrity

The Claremont Colleges are an academic community where it is assumed that all individual members are committed to high ethical standards in meeting their responsibilities and in their relationships with each other. Students are expected to behave as mature and responsible members of this community and to follow ethical standards both in their personal conduct and in their behavior towards other members of the community. The College expects students to understand and to follow basic standards of honesty and integrity. Some common violations of these basic standards of academic integrity include but are not limited to, plagiarism, cheating on tests and examinations, presenting work completed for one course as original work for another and other forms of dishonest performance on college assignments.

I understand that any suspicion of cheating on this exam will be investigated and reported to my school's Academic Standards Committee. If convicted of academic dishonesty, I understand that I may receive a 0% on this exam, fail the course, or be placed on academic probation.

1. This 75-minute exam consists of Multiple Choice, Short-Answer, and Application questions.
2. All you need to complete the exam is a pencil; no other devices are allowed for any reason.
3. Please use the restroom before class as you will not be allowed to leave during the exam. If you have a medical condition that prevents this restriction, please provide documentation and coordinate with the DOS office so that accommodations can be made.
4. Please answer all questions, even if you have to guess, because your score will equal only the number of items correct.
5. **Cheating.** If you believe someone is copying your work, draw a small + someplace on your exam. Then please come to the front of the class direct my attention to that + and then ask me a question about a topic. I'll monitor the situation for you.
6. If you use your cell phone at any time during the exam, for any reason, your grade will result in a 0%. If you need to go to the restroom, you have to leave your phone on the front desk.
7. Return your exam or your grade will result in a 0%. You can ask to review it anytime you wish.

By signing below, I acknowledge the policy on academic integrity at my home institution and profess that all work on this exam falls within the purview of academic honesty.

Name: _____

Exam Copy: _____

1. Which of the following would be considered a task variable?
 - A. Whether participants solve difficult problems followed by easy problems compared with the reverse order.
 - B. Whether a pilot's abilities to navigate a flight simulator is evaluated in the presence of a co-pilot or not.
 - C. Whether personal experience negotiating salaries for a new job position influences the salary offered by an employer.
 - D. Whether participants play a gambling game in the middle of the night or during the middle of the day.
2. Which of the following would be considered an *environmental/context* variable?
 - A. Whether participants are happy people.
 - B. Whether pilots' abilities to navigate a flight simulator is evaluated in the presence of a co-pilot or not.
 - C. Whether personal experience negotiating salaries for a new job position influences the salary offered by an employer.
 - D. Whether participants solve difficult problems followed by easy problems compared with the reverse order.
3. In experimental research, experimenters manipulate _____ variables in order to examine a(n) _____ influence on a _____ variable.
 - A. Independent; causal; extraneous
 - B. Dependent; correlational; independent
 - C. Independent; causal; dependent
 - D. Independent; correlational; extraneous

An advertising team creates three different forms of an ad and then mails at random a different form to equal number of different households in a community in Los Angeles. After two months, the advertising team determines that one ad led to more purchases than the other two.

4. The *independent variable* in this example is:
5. The *dependent variable* in this example is:
6. The research *design* in this example is a:
 - A. between-subjects experimental design
 - B. repeated-measures experimental design
 - C. mixed design
 - D. correlational design

7. In the 1970s, a team of researchers in Taiwan decided to find variables that best predicted who would make use of birth-control methods. They found that people who owned more electrical appliances in their homes (such as toasters and fans) were more likely to use birth-control methods. Based only on the data presented, what can you conclude?
- A. The more electrical appliances in people's homes, the more likely it is they will use birth-control methods.
 - B. Buying of electrical appliances causes people to want to use birth-control methods.
 - C. The use of birth-control methods causes people to have more money to buy electrical appliances.
 - D. Educated people are more likely to use birth-control methods and to have enough money to buy electrical appliances.
8. If your experimental research design is described as a 2 x 3 mixed design, then you know that there is/are ____ (enter quantity) between-subjects independent/predictor variable(s).
9. Sally is working on her thesis project that sets out to understand predictors of long term knowledge acquired over four years of college. In particular, she is interested in understanding how a) study quality, b) sleep duration, and c) number of daily phone-related distractions could predict performance on an exit exam for a particular major. Help her identify the strongest of the three relationships below by marking an X.
- ___ performance on the knowledge assessment and study quality, $r = .42$
 - ___ performance on the knowledge assessment and sleep duration, $r = .33$
 - ___ performance on the knowledge assessment and distractions, $r = -.48$

10. (10 pts) Design a novel (e.g., not discussed in class) cognition experiment. Your experiment should follow a 2 x 2 design to measure some relationship between variables related to human cognition. For your experimental design, at least one of your independent variables has to be a *task* variable and at least one other has to be a *person* variable. Make sure to specify whether your variables are between or within subjects. Label your variables and the levels clearly so that I understand your design, your experimental manipulation, and your measure of cognitive behavior. You don't need to write a paragraph but you should be brief and clear.

11. (6 pts) Some of your reading covered a topic named "Spotting Main Effects and Interactions". Now is your time to show off your knowledge.

A) Based on your proposed design (*in the previous question*), create a graph to visually represent how you might predict your data could turn out based on your selected variables (e.g., how the averages/means for the dependent variable might appear for your experimental conditions).

B) Make sure to label your graph to include your DV and IVs for easy interpretation.

C) Then, interpret your graph describing the presence or absence of main effects and interactions in a way that conveys that you understand them. Your description should be clear and easy to follow and in order to convey your understanding of main effects and interactions, you just use those terms in your answer.

12. While walking downtown with your friend, you see some cars race by you. One of the drivers almost hits your friend and you want to call and report them to the police. Which is the best example of an illusory conjunction?
- A. Thinking that the cars were traveling faster than they actually were
 - B. Confusing the name of the street you were walking down with the street of your campus address
 - C. Believing that you saw a red car and a blue truck when you actually saw a red truck and a blue car
 - D. Thinking that the license plate on the car was missing when it was not
13. Which of the following would be the best example of *bottom-up* rather than *top-down* processing influencing perception?
- A. If bitter coffee is perceived as less bitter only after advertising to consumers that the coffee is not bitter.
 - B. If protein bars are rated by consumers as more grainy when packaging is labeled "soy protein" than when no label is listed on packaging.
 - C. If Coke is rated higher when people drink it from a cup bearing the Coke logo than when the logo is not present at the time of tasting.
 - D. If preference ratings for beer with vinegar added were lower than for beer without vinegar added if the knowledge of the vinegar is available after tasting occurred.
14. Template-matching model was a view used to describe and understand how we might perceive visual objects. There were, however, problems with that perspective insofar as it could not account for:
- A. purkinje shifts across stimuli
 - B. differences in voice-onset time
 - C. variations in the shape of letters
 - D. attentional biases toward words
15. I mentioned that perception is argued to be either constructed or directed. We discussed how perception was a construction of what Triesman called _____.
16. You go camping in the forest with a group of friends and see a sign (see below). The word is degraded and by itself somewhat difficult to read. In terms of the combination of two cognitive processes involved in the construction of perception, which of those two cognitive processes discussed for perception allows you to read this word rather easily?



One day, you drive your little nephew to the park. On the way there, he sees a traffic sign with blinking lights. He asks you, "How do they get those lights to move on the sign?". You have to explain to him that the lights are not physically moving but rather only appear to be moving.

17. Your nephew is asking about something which you now know as the:
18. In order for you and your nephew to perceive the light as moving from point A to point B, you know that the lights were programmed to flash such that the time interval between them was less than ____ milliseconds) ____ .
19. While editing a video for your new job, you have some fun messing with the audio team. You edit the video to display the actors' mouths speaking different words than they are truly speaking on the recorded audio track. While the audio team reviews the video the next day, they discover what they believe is an error in the audio recording but when they listen to the audio, everything sounds as it should. They are confused about why their perception of the audio is different in the two situations. After a good laugh, you explain that they fell victim to an effect of multimodal perception known as:
20. Which of the following would be the best example of *bottom-up processing* influencing perception?
 - A. If bitter coffee is perceived as less bitter only after advertising to consumers that the coffee is not bitter.
 - B. If Coke is rated higher when people drink it from a cup bearing the Coke logo than when the logo is not present.
 - C. If preference ratings for beer with vinegar added were lower than for beer without vinegar added if the knowledge of the vinegar is available after tasting occurred.
 - D. If protein bars are rated by consumers as more grainy when packaging is labeled "soy protein" than when no label is listed on packaging.
21. If flashed very briefly, you might not be able to make out the letter "R" when presented alone but you are able to identify the third letter of "DARK" as an "R". This is referred to as:
 - A. the repetition priming effect
 - B. the word-superiority effect
 - C. bottom-up processing
 - D. the contralateral bias effect

22. Cherry (1953) and others used a dichotic-listening task in which they varied the type of information presented to the unattended channel. Which of the following represents the 'shadowing task' participants were asked to perform?
- A. learn only what they had heard from the unattended channel
 - B. report back what they had heard from the attended channel
 - C. report back what they had heard from the unattended channel
 - D. learn only what they had heard from the attended channel
23. In class we discussed an experiment using the dichotic-listening task for which participants were presented ambiguous verbal stimuli (e.g., MacKay's 1973 study). Based on that study, which of the following is the most accurate summary of the results?
- A. Information presented to the unattended channel never enters conscious awareness.
 - B. Information presented to the unattended channel can bias performance even when the one is not aware of the information presented to said channel.
 - C. People are not very good at shadowing.
 - D. People often switch attention to the unattended channel, especially if the information presented to that channel is not meaningful.
24. Dorothy is out at her favorite disco, chatting with friends and grooving to the music when she overhears her name and turns her attention towards that conversation to determine what gossip is being spread about her this week. This effect is known as the:
25. Face processing appears to be special for humans. Memory for faces however, is compromised when they are seen and studied upside down. This finding is referred to as:
- A. Prosopagnosia
 - B. Visual agnosia
 - C. Face inversion effect
 - D. Holistic representations
26. Forms of selective attention are characterized by different brain pathways or networks. Research suggests that exogenous attention is characterized by ____ whereas endogenous attention is characterized by ____.
- A. top-down activation of attention projecting from the visual cortex to the prefrontal cortex; bottom-up activation projecting from the prefrontal cortex to the visual cortex
 - B. top-down activation of attention projecting from the motor cortex to the visual cortex; bottom-up activation projecting from the visual cortex to the prefrontal cortex
 - C. bottom-up activation of attention projecting from the motor cortex to the prefrontal cortex; bottom-up activation projecting from the visual cortex to the prefrontal cortex
 - D. bottom-up activation projecting from the visual cortex to the prefrontal cortex; top-down activation of attention projecting from the prefrontal cortex to the visual cortex

27. Looking for an object in one's environment can result in an immediate inability to notice/detect another object. This inability affects most everyone in the population but individuals with ADHD can show a more pronounced deficit. This inability measured using the rapid serial visual presentation (RSVP) paradigm is known as the:
28. Which would be an example of *change blindness*?
- A. Noticing Waldo in a hidden figure
 - B. Not noticing Waldo in a hidden figure
 - C. Noticing someone's tie disappearing in one movie frame and then returning in the next frame
 - D. Not noticing someone's tie disappearing in one movie frame and then returning in the next frame
29. MacLeod et al. (1986) used a task to study implicit biases in attention for individuals who might be susceptible to emotional disorders (not clinically diagnosed). In that study, the authors basically found that compared with control participants people with:
- A. anxiety showed a bias toward locations previously presented with threat-related stimuli
 - B. anxiety showed a bias away from locations previously presented by all stimuli because they are on heightened alert
 - C. bipolar disorder showed a bias toward locations previously presented with threat-related stimuli
 - D. depression showed no bias toward locations previously presented with threat-related stimuli
 - E. depression showed no bias toward locations previously presented with appetitive stimuli
30. If you were trying to screen individuals to determine who has a bias toward the spatial location of different words. You may be interested in which task?
- A. Dichotic-listening task
 - B. Dot-probe task
 - C. Rapid Visual Serial Presentation task
 - D. Word-superiority task
 - E. Edge-detection task

End

31. Which of the following would most likely elicit a type of "testing effect"?

- A. Staring at people while they are taking tests
- B. Reading notes once a week for the entire semester
- C. Highlighting content in a textbook
- D. Using flashcards

32. Roediger and Karpicke studied a phenomenon called the testing effect. What was their main finding?

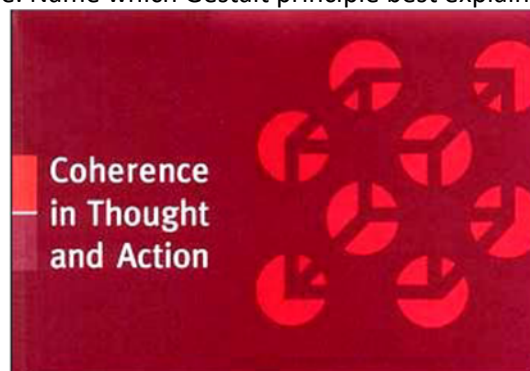
- A. Testing produces better learning than restudying when testing takes place at longer retention intervals.
- B. Testing produces better learning than restudying.
- C. Restudying produces better learning than testing.
- D. Restudying and resting produce the same outcomes.

33. Pearson's r is a correlation is a particular measure of relationship between variables which takes a particular mathematical form. Not all relationships between variables need to take this form but when researchers use the Pearson's r , they are making a specific statement that the variables are related in this particular way. The mathematical form is: _____

I want to determine if giving daily quizzes improve test scores in Cognitive Psychology. Let's say that I do not give daily quizzes in my 8:00 AM section, but do give daily quizzes in my 10:30 AM section. At the end of the semester, I find that students who are enrolled in the later section (10:30 AM) received higher average test scores than did students in the earlier section. Which variables are *confounded* in this study, which pose a problem for making claims about the IV-DV relationship?

- A. Giving daily quizzes is confounded with average test score
- B. Average test score is confounded with class meeting time
- C. Giving daily quizzes is confounded with class meeting time
- D. Class meeting time is confounded with average test score

If read in book - Although we are not always aware of them, Gestalt principles of perception are used regularly for company logos, book covers, and more. Name which Gestalt principle best explains both of the examples below.



34. You might see different numbers and letters presented in different colors (e.g., E in green, F in red, 2 in blue). When asked to report the letters, numbers, or even colors presented individually, you might be quite accurate. When asked

to identify the colors of specific items, you may make errors. This type of error illustrates how the components (e.g., colors, shapes, etc.) of objects are independent from each other and that the links/associations between them are fragile thus often resulting in them being reconstructed erroneously, perhaps even creating items that were never presented. These errors were referred to as:

- A. Template errors
- B. Edge detectors
- C. Categorical errors
- D. Illusory conjunctions
- E. Spatiotemporal errors

35. An applied cognitive psychologist would most likely be interested in which of the following?

- A. Pinpointing which parts of the brain is responsible for imaginative thought.
- B. Understanding what kinds of enriched cognitive tasks would help children learn better in the classroom.
- C. Understanding if participants remember more emotional words than non-emotional words.
- D. Understanding what kind of brain activity occurs during REM sleep.

36. Name the brain region in the cortex that appears to be involved in *familiarity processing*. This brain region is also believed by some (e.g., Vann et al. 2009) to be implicated in Capgras delusion because this region also overlaps with brain regions associated with brain lesions in patients with Capgras delusion.

37. E2 The _____ is the junction between the axon tip of the sending neuron and the dendrite, or cell body, of the receiving neuron.

38. (2) Research on split-brain patients taught us something interesting about cognitive functioning and in particular how information acquired from sensory organs on one side of the body is sent to the contralateral (other side) hemisphere of the brain. People with a severed _____ are unable to transmit sensory information received from one side of the body to the opposite (contralateral) side of the brain.

39. In split-brain studies, patients might grasp an object sunglasses using their left hands, thus sending the tactile information to the right hemisphere. In many instances, patients had an impaired ability. What was that impaired ability?

40. Chef Sir Mix-It-Up works at "Scrambled Eggs," a breakfast buffet in a halfway house for patients with brain damage. You order a fried egg and watch Chef Sir Mix-It-Up prepare it for you. He cracks the egg, then places it in the pan, then turns on the stovetop, and then adds the grease. You think to yourself that he clearly has some impairment to his executive functioning. Based on your observations of the chef, what brain area of his is likely damaged?

- A. Primary Visual Cortex
- B. Corpus Callosum
- C. Amygdala

- D. Prefrontal Cortex
- E. Medulla Oblongata

41. What brain-imaging technique might be used to simulate a temporary lesion to a particular brain area?

42. E2 You are researcher who studies driving and attention using a driving simulator. If you wanted to examine what part of the brain is activated or evoked at the exact moment a participant sees a traffic light turn from red to green, by measuring the brain's electrical signal, which brain-imaging technique would you prefer and why? Keep in mind the researcher's goals when considering a best answer.

43. E2 You are interested in determining which part of the brain is activated when you imagine sun tanning on the beach rather than taking this exam. You might use a brain-imaging technique that measures changes in oxygenated and deoxygenated blood in different regions of the brain. What is the name of the technique? If you abbreviate, include the full name.

44. E2 Sal is 86 years old and has difficulty performing various attention tasks. Which of the following is an example of his difficulty with inhibition?

- A. He misses phone calls because he cannot hear his phone ring.
- B. He never misses phone calls because he can hear his phone ring.
- C. He is able to prevent himself from saying something that he knows is inappropriate to say.
- D. He is unable to prevent himself from saying something that he knows is inappropriate to say.

45. The research on math anxiety and working memory suggests that math anxiety:

- a. Activates the amygdala and impairs subvocalization of the steps used to solve math problems
- b. Overactivates the occipital lobe and reduces blood flow to the occular nucleus
- c. Interferes with the visual component of solving math problems
- d. Interferes with executive processing needed to solve math problems

46. E2 Although one may argue whether any cognitive task could be truly automatic, we discussed in class 4 conditions that satisfy a definition of automaticity according to Schneider and Schiffrin (1977) and Logan (1988). Which of the following is **not** one of those conditions?

- a. Not attentional demanding/performed without attention
- b. Without involving conscious awareness
- c. No interference with other mental activities
- d. Other mental activities interfere with tasks that can be performed automatically

47. (5 pts) You now know that when someone tells you that he will study as much as possible before class so that the information he needs is in short-term memory, he clearly does not understand the theories or research on the topic. In class, we discussed the duration for short-term memory using the paradigm by Brown (1958) and Peterson and Peterson (1959). What was the duration?

- a. Approximately 5 seconds
- b. Approximately 10 seconds
- c. Approximately 25 seconds
- d. Approximately 45 seconds
- e. Approximately 60 seconds
- f. Approximately 90 seconds
- g. It's unlimited in duration

48. (5 pts) You read an article by Strayer and Johnson (2001) who argued that dual-tasking, like driving while talking on a cell phone, can lead to cognitive deficits. Which of the following is an implication of their findings?

- a. Talking on the cell phone is equivalent to talking to a passenger because generating information during conversations is disruptive to central-executive processing.
- b. Talking on the cell phone is more disruptive than talking to a passenger because when people ride in the car together they change their conversation.
- c. Talking on the cell is similar to driving while not under the influence of alcohol.
- d. Talking on the cell is similar to overloading the phonological loop.

49. Conway, Cowan, and Bunting studied the cocktail-party effect from the perspective of working-memory capacity. What was their main finding?

50. (5 pts) Describe the serial-position effect by naming and describing the main findings of it. Then explain how one of those findings is the result of short-term memory limitations.

51. (5 pts) What is the testing effect?

52. E2 (5 pts) While at the café, you overhear one person tell another person that “the Stroop Effect occurs because naming the font color of color words is an automatic task.” **For 2 points**, state whether you agree or disagree with this statement. **For another 3 points**, briefly justify your response using the word “automatic” in your answer. This can be done in one or two sentences. Please do not write a paragraph.

53. (6 pts) Name the components of Baddeley’s working-memory model and describe the purpose of each component according to his view.

54. (2 pts) According to Baddeley's model, what effect would articulatory suppression have on learning where objects are spatially located in a room?

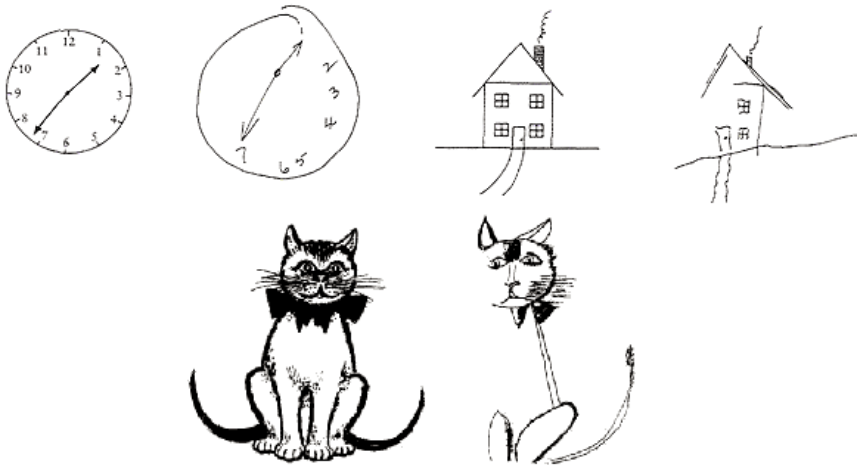
BONUS:

Identify one of the main brain structures associated with ADHD and then answer the questions that follow.

Structure: _____

- a. Are there *structural* differences for those with and without ADHD? If so, describe one.
- b. Are there *functional* differences for those with and without ADHD? If so, describe one.

Bonus: The sketches below illustrate a deficit in visual attention associated with brain damage to a particular lobe of the brain. Name this deficit.



55. In the 1970s, a team of researchers in Taiwan decided to find variables that best predicted who would make use of birth-control methods. They found that people who owned more electrical appliances in their homes (such as toasters and fans) were more likely to use birth-control methods. Based only on the data measured, what can you conclude?

- E. The more electrical appliances in people's homes, the more likely they will use birth-control methods.
- F. Buying of electrical appliances causes people to want to use birth-control methods.
- G. The use of birth-control methods causes people to have more money to buy electrical appliances.
- H. Educated people are more likely to use birth-control methods and to have enough money to buy electrical appliances.

56. I want to determine if giving daily quizzes improve test scores in Cognitive Psychology. Let's say that I do not give daily quizzes in my 8:00 AM section, but do give daily quizzes in my 10:30 AM section. At the end of the semester, I find that students who are enrolled in the later section (10:30 AM) received higher average test scores than did students in the earlier section. Which variables are *confounded* with each other in this study, and therefore pose a problem for making claims about the IV-DV relationship?

- E. Giving daily quizzes is confounded with average test score
- F. Average test score is confounded with class meeting time
- G. Giving daily quizzes is confounded with class meeting time
- H. Class meeting time is confounded with average test score

57. In experimental research, experimenters manipulate _____ variables in order to examine a _____ on a _____ variable.

- E. Independent; causal; extraneous
- F. Independent; correlational; extraneous
- G. Independent; causal; dependent
- H. Independent; correlational; extraneous

58. Student 1

- A. x
- B. x
- C. x
- D. x

59. Student 2

- A. x
- B. x
- C. x
- D. x

MATCHING PSYCHOLOGICAL CONCEPTS: Please match the item in the right column that is most related to the item in the left column.

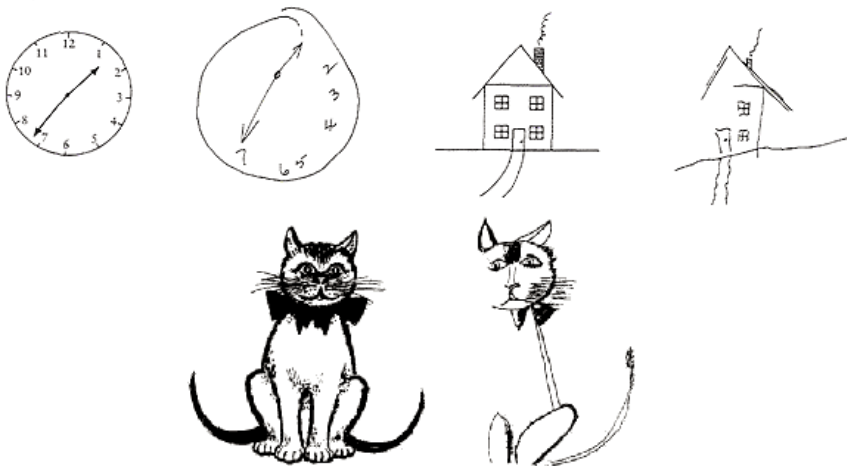
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|--|-------------------------|
| 28. _____ radioactive tracers | A. parietal |
| 29. _____ a form of temporary lesioning | B. temporal |
| 30. _____ low-level vision visual processing | C. frontal |
| | D. occipital |
| | E. occular-regional |
| | F. partitional |
| | G. photological loop |
| | H. independent variable |
| | I. dependent variable |
| | J. confound |
| | K. TMS |
| | L. CAT |
| | M. PET |
| | N. PRI |
| | O. fMRI |
| | P. NPR |
| | Q. Broca's Area |
| | R. Wernicke's Area |

60. Addressed in class, what finding from Treisman's pop-out research best illustrates automatic/attention free processing?

- A. There is NO increase in search time when you add distractor objects to an array in which the targets share features with their background (i.e., conjunctive search)
- B. There is NO increase in search time when you add distractor objects to an array in which the targets DO NOT share features with their background (i.e., non-conjunctive search or single-feature search)
- C. There is an increase in search time when you add distractor objects to an array in which the targets share features with their background (i.e., conjunctive search)
- D. There is an increase in search time when you add distractor objects to an array in which the targets DO NOT share features with their background (i.e., non-conjunctive search or single-feature search)

Please make sure that you have answered ALL questions.

Bonus: The sketches below illustrate a deficit in visual attention associated with brain damage to a particular lobe of the brain. Name this deficit.



STM and Working Memory

61. (4) In class, we describe the **serial-position effect** and why it occurs. For **2 points**, name and describe briefly the two main findings of this effect. For **2 additional points**, identify which component of the information-processing model is responsible for each of these findings.
62. (4) Making sure to name the appropriate component of Baddeley's model of working memory, explain why it is difficult to rub your belly and pat the top of your head simultaneously. Using the term *selective-interference* in your answer would be good.
63. (4) For **2 points**, tell me how many pieces of unrelated information can typically be maintained in short-term memory? For **2 additional points**, tell me what the retention interval (duration) limit is for information in short-term memory in the absence of it being rehearsed? *Hint*: Brown/Peterson task.

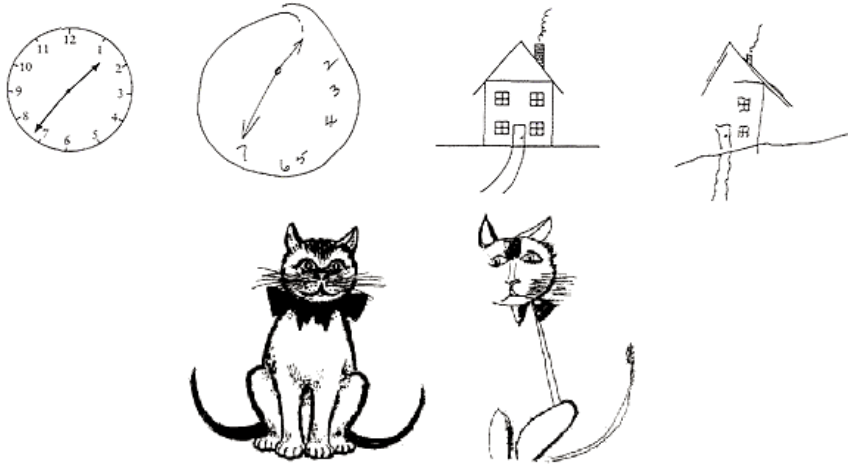
Encoding

64. (3) I mentioned that the act of answering flash cards is an excellent way to study information. What was the name of the concept that explains why answering flashcards works so effectively?

65. (4) Briefly describe the difference between *massed* and *distributed* practice.

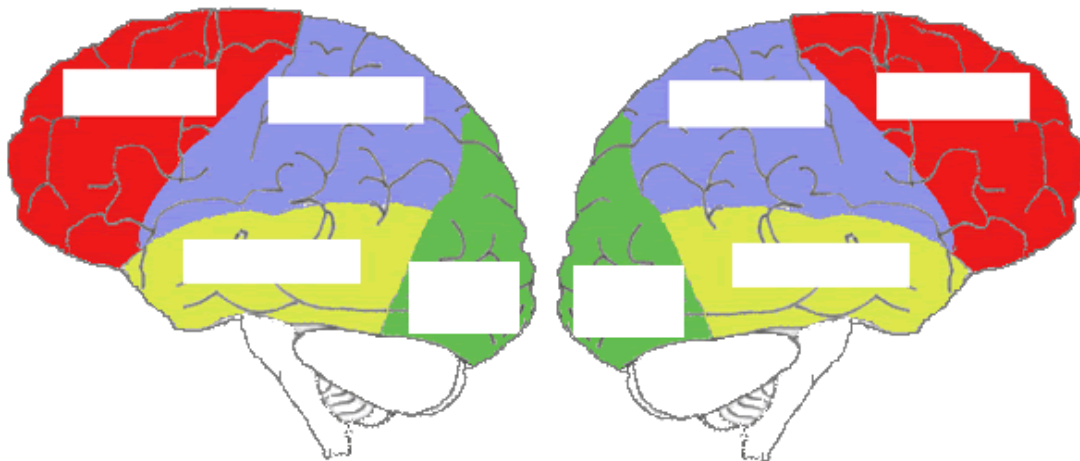
66. (3) What is the name of the phenomenon that explains why we remember information that we associate to ourselves better than information for which we consider only structural features or semantics?

Bonus: The sketches below illustrate a deficit in visual attention associated with brain damage in a particular lobe of the brain. What is the name of this deficit? In the brain images below, write the name of the lobe associated with this deficit. Be sure to write the lobe in the appropriate hemisphere.



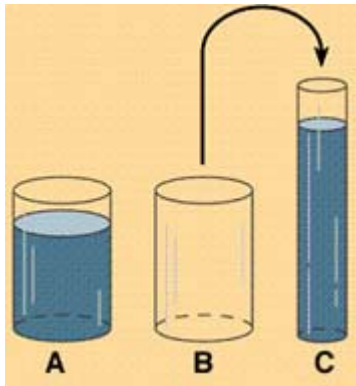
Left Hemisphere

Right Hemisphere

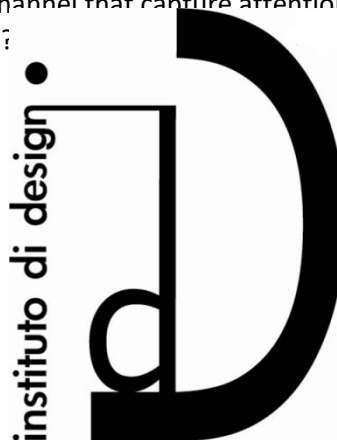


67. According to your book, there were 3 criteria that determine whether a skill is automatic or not. Which of the following was NOT one of those criteria?
- A. The skill only involves bottom-up processing
 - B. The skill occurs without intention
 - C. The skill does not give rise to conscious awareness

68. (3) **final exam** As a child, you might have been upset if your sibling got soda in a tall thin glass



69. **Final exam** (4) In class, we discussed the serial-position effect and its two characteristics: primacy and recency. How do we know that the recency effect is a result of a short-term memory deficit? That is, how do you make the recency effect go away?
70. In class I discussed Danny Kahneman's alternative to bottleneck theories of attention. His view was that attention is guided by variable like arousal, disposition, and the amount of attentional resources available for performing mental activities. What did he call it and how is it different from bottleneck theories?
1. () In class, you learned that the scientific method is an amalgamation of two sources of knowledge. Name those two sources and provide a defi
 2. Explain whether
71. *Early-selection and late-selection models* of attention differ in their explanations for what informational characteristics get detected from an unattended channel. In terms of the characteristics from the unattended channel that capture attention, what is the major difference between these two models?
- 72.
- 73.
- 74.
- 75.



3. Someone tells you they purchased a *raffia* last Saturday. You learn later this is a palm plant. You have an “AHA” experience once you figure it out. What cognitive principle is being used in this example? List two advantages of such mental representations.
4. Anderson’s text does a good job of describing how a physiological approach can contribute to our understanding of cognition. According to him, what is one main use of such knowledge in cognition?
5. As described in class, briefly state how the principle (or technique, really) of *hierarchical subtraction* works.
6. Define in one sentence and then please provide two brief examples of categorical perception.
7. Please describe one experiment and its empirical outcome that demonstrates that people have schematic story grammars that aid comprehension.
8. As described in your text, but was mentioned in lecture, what is the *best* explanation for the role of context in perception?

%% the constraints provided by the context are combined with the
%% constraints provided by bottom-up processing.
9. In a sentence (or two) describe default assignment in connectionist models. Is there any similarity to schemata in this feature of PDP models?
10. As described in both text and lecture, reaction times are governed by different variables in experiments on mental images versus linear orderings. What determines reaction times in these two domains?

%% intervening distance versus number of intervening items
11. If people study a list of sentences such as “The utensil would not write” versus “The utensil would not cut,” what would be good retrieval cues in each of these cases and what does this demonstrate about cognitive processing?
12. As could be inferred across chapters in your text, which of the following would **best** help us to remember poems: mental images, linear orderings, propositional networks, or schemas. In a sentence or two justify your answer. (This is a hard question.)
13. Having learned about both slips of action and schemas, how can certain slips of action be explained by appealing to schema theory?
14. Briefly describe the basic results of the Brewer and Tryens experiment. To jog your memory, participants come in and “wait” in an office for the experiment proper to start. Actually, the preliminary waiting was the experimental learning phase.

15. As described in your text, if I present you with a list of digits (38926) and then ask you which digit followed a particular one (9), reaction time would be a function of what?

%% BOTH serial position of the digit and length of the list

16. In a sentence, define the classical view of categories. Give me two brief examples that tended to discredit this view.

17. Give me two brief examples from cognitive neuroscience (i.e., neuropsychological evidence) that we have the ability to form mental images and this ability is not propositionally based.

18. According to your text (or at least implied in it), why is it difficult to represent continuous varying quantities such as the size or shape of an apple in a propositional network?

19. According to your text, the strength of belief in a particular unit of a connectionist model is represented by what?

%% its level of conditioning

76. (3) Which of the following theories is concerned with the allocation of mental effort to various activities?

- A. Broadbent's filter model
- B. Treisman's attenuation model
- C. Kahneman's capacity model
- D. Deutsch/Norman memory selection model

77. (4) Which of the following is NOT evidence that we build up a representation from features during visual perception?

- A. People confuse a P and a R more often than they confuse a Q and a X
- B. We see the whole as greater than the sums of the parts
- C. Features illusory combine such that objects are perceived that are NOT in the perceptual array
- D. When we habituate to features they will disappear one by one rather than fading away entirely

Attention

78. (3) Provide a general description of one *empirical* example that was presented in either your book or in class that illustrated the claim that "No task is cognitively demanding, but rather it is simply unpracticed." Please note that I am asking for an experiment, not a personal experience.

79. (4) In class, I stated 4 conditions that satisfy a definition of automaticity according to Logan (1988) and Schneider and Shiffrin (1977). Your textbook echoed these. Briefly specify 3 of those 4 conditions.

80. (3) Although not all people believe that human perception is consistent with this theory, what theory argues that we do not recognize objects because we have exact replicas of them stored in memory, but rather we recognize them because they are very similar to an idealized, or abstract, representation of that object.
81. (4) You read in your textbook that people with *high* versus *low* working-memory capacity do not experience the cocktail-party effect as equally often (Conway, Cowan, & Bunting, 2001). Which group is less likely to experience the cocktail-party effect? Briefly state what the main explanation is for this difference? This can be done in one or two sentences. Please do not write a paragraph.
82. (3) Is the cocktail-party effect more consistent with an *early-selection* or *late-selection* bottleneck theory of attention? You do not have to explain why.
83. (4) While at the café, you overhear one person tell another person that “the Stroop Effect occurs because naming the font color of color words is an automatic task.” **For 2 points**, state whether you agree or disagree with this statement. For **another 2 points**, briefly justify your response using the word “automatic” in your answer. This can be done in one or two sentences. Please do not write a paragraph.

Bonus: For class, you read an article on cellular phone use and driving. The authors suggested that cell phone use impairs driving in part because people attend less to visual inputs in their environment, a phenomenon they referred to as *inattentional blindness*. What did they find that supports their interpretation?

84. (2) We read a study about beer preferences that suggested top-down processes in perception influences people's taste experience, rather than simply altering their reporting of the experience. What data from that study supported the idea that *top-down processes influence actual perception*?
- A. When people were withheld information about the "secret ingredient" in MIT brew, they preferred MIT brew to regular beer, but if they were told the "secret ingredient" **before** tasting both beers they preferred regular beer. Being told that MIT brew contained the secret ingredient **after** tasting both beers did not affect beer preference.
 - B. **When people were told the "secret ingredient" in MIT brew after they tasted both beers, they preferred MIT brew to regular beer????????????????.**
 - C. When people were withheld information about the "secret ingredient" in MIT brew before tasting beers or **after** tasting beers, they preferred MIT brew to regular beer, but they preferred regular beer if they were told the "secret ingredient" **before** tasting both beers.
 - D. People preferred MIT brew when they were told the "secret ingredient" in MIT brew **after** tasting both beers and they had the same preference when they **were not told** the "secret ingredient" in MIT brew.
 - E. Telling people that MIT brew contained the secret ingredient **after** tasting both beers influenced their beer preference.