

## Safe Practice Questions:

### Fill-ins

The problem of figuring out where one word ends and the next begins during speech perception is called the problem of \_\_\_\_\_.

Nouns that denote particular objects are called \_\_\_\_\_ nouns, and can be singular or plural.

The meaningless units of sound that make up speech are called \_\_\_\_\_.

Words have \_\_\_\_\_ categories that determine how they can be combined to make up meaningful sentences.

Matching strategy describes a strategy of \_\_\_\_\_ conclusions when they “match” those in the \_\_\_\_\_.

Problem solving shortcuts, or \_\_\_\_\_ are widely used even though they sometimes lead to systematic \_\_\_\_\_ in judgment.

1) A \_\_\_\_\_ theory is how we should think in order to reach the correct conclusion most often, but \_\_\_\_\_ theory is how we actually think.

2) People typically try to solve \_\_\_\_\_ problems by transforming them into \_\_\_\_\_ problems by adding constraints.

3) A \_\_\_\_\_ is a quick but approximate way of solving a problem whereas a \_\_\_\_\_ is a slow and accurate way of solving a problem

Kosslyn’s map task supports the \_\_\_\_\_ representation of imagery.

The \_\_\_\_\_ lobe is in charge of purely spatial imagery.

The Brooks interference task shows that mental scanning is both \_\_\_\_\_ and \_\_\_\_\_.

Although speech sounds actually vary along a continuum, adults tend to perceive them categorically. Describe empirical evidence suggesting that newborns innately recognize the same distinctions between phonemes.

Give one example of a linguistic slip (or “Spoonerism”), and explain its implications for our mental representations of language.

Name one way that language influences performance on a nonlinguistic task.

Contrast the behaviorist and cognitive views of how grammar is learned.

Give one reason to be cautious when interpreting cross-linguistic studies on how language affects thought.

What role does “motherese” play in children’s language acquisition?

There are several known cases of individuals who were deprived of early language input. Compare the language acquisition of Isabelle, who was introduced to language at the age of 6, and Chelsea, who was first exposed to language at 31.

Suppose a black patch is projected to your left eye and a white patch is projected to your right eye. What would you consciously perceive?

What is aphasia?

Describe what the availability heuristic is and explain why it sometimes leads us to biased judgments.

Explain the advantages and disadvantages of the difference reduction method and the means-end analysis.

How do search heuristics help you solve anagrams?

Describe experimental evidence supporting the usefulness of analogies.

Describe some empirical evidence against verbal encoding of images.

Contrast the analogical and propositional representations of imagery

Is there evidence for a double dissociation between imagery and perception? If so, what is it?

### Question Sets

#### **Visual Imagery**

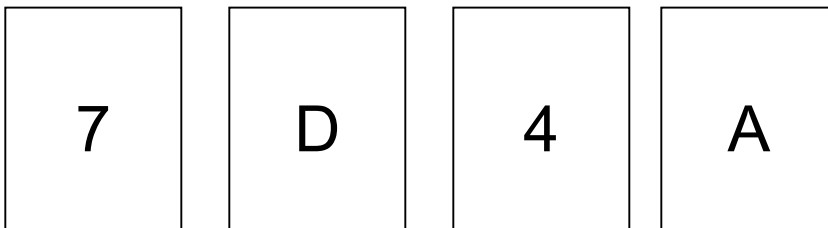
In the Island Scanning task, Kosslyn had participants memorize a map. Then he asked them to form a mental image of the map and scan from one location to another.

- a. What did he find?
- b. How did he interpret this finding?
- c. What is one alternate interpretation of this finding?
- d. Describe a study which you believe rules out this alternate interpretation. Make sure to explain what was manipulated, what was measured and what the finding was.

#### **Reasoning**

A. 100 college students are given the following problem.

Bob says: "If a card has an even number on one side then it has a consonant on the other." Which cards would you have to turn over to find out if Bob's statement is true?



What is the logically correct answer? (1pt)

About how many of the students will give this answer? (1pt)

Which card or cards will the other students say should be turned over? Why? (2pts)

B. Now 100 new students are given this problem: “If you have a Canadian passport, then you must have a tourist visa to enter the country” Which passports must be checked to verify this rule?

Canada	work visa	France	tourist visa
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What is the logically correct answer? (1pt)

About how many of the students will give this answer? (1pt)

What are two distinct theories which explain why performance might be different on these two tasks? (4pts)

### Fill-ins

The problem of figuring out where one word ends and the next begins during speech perception is called the problem of segmentation.

Nouns that denote particular objects are called count nouns, and can be singular or plural.

The meaningless units of sound that make up speech are called phonemes.

Words have syntactic categories that determine how they can be combined to make up meaningful sentences.

Matching strategy describes a strategy of endorsing conclusions when they “match” those in the premises.

Problem solving shortcuts, or heuristics are widely used even though they sometimes lead to systematic errors in judgment.

1) \_\_\_\_\_ theory is how we should think in order to reach the correct conclusion most often, but \_\_\_\_\_ theory is how we actually think.

- Normative, descriptive

2) People typically try to solve \_\_\_\_\_ problems by transforming them into \_\_\_\_\_ problems by adding constraints.

- Ill-defined, well-defined

3) A \_\_\_\_\_ is a quick but approximate way of solving a problem whereas a \_\_\_\_\_ is a slow and accurate way of solving a problem

- Heuristic, algorithm

Kosslyn’s map task supports the (analogical) representation of imagery.

The (parietal) lobe is in charge of purely spatial imagery.

The Brooks interference task shows that mental scanning is both (spatial) and (visual).

### Short Answers

Although speech sounds actually vary along a continuum, adults tend to perceive them categorically. Describe empirical evidence suggesting that newborns innately recognize the same distinctions between phonemes.

**Playing a novel stimulus like a particular phoneme to newborns prompts a sucking response, that stops as infants habituate to that phoneme. If you play a new phoneme that adults recognize as the same categorically the infants are still habituated, but if you play a different category of phoneme the infants dishabituate.**

Give one example of a linguistic slip (or “Spoonerism”), and explain its implications for our mental representations of language.

**Someone might say “When I stop, I can’t start”, instead of “When I start, I can’t stop”, but they’re unlikely to say “When start I, I can’t stop” – the exchanges only occur between two verbs or two nouns, not between a verb or noun. This is evidence that there are mental representations of syntactic categories like nouns and verbs.**

Name one way that language influences performance on a nonlinguistic task.

**If subjects are shown an image or color and then asked to remember it later, the way in which they verbally encoded the stimulus can cause them to misremember it.**

Contrast the behaviorist and cognitive views of how grammar is learned.

**Behaviorists proposed that language is learned through reinforcement of particular pairings or chains of word, like any other habit. The cognitive view is that children learn (or innately know) abstract rules, and just have to learn what words match what syntactic categories.**

Give one reason to be cautious when interpreting cross-linguistic studies on how language affects thought.

**Groups that use different languages often also have very different cultures. It’s hard to know whether the differences seen on any tasks are due to the influence of language or some other aspect of culture on thought.**

What role does “motherese” play in children’s language acquisition?

**Motherese seems to play a very small role, so long as children have some other source of linguistic input. While it might prompt children to more often use particular words or grammatical structures that their parents use frequently, it doesn’t affect the stages of language development children go through or their end level of proficiency.**

There are several known cases of individuals who were deprived of early language input. Compare the language acquisition of Isabelle, who was introduced to language at the age of 6, and Chelsea, who was first exposed to language at 31.

**Isabelle demonstrated normal language acquisition, going through the same stages exhibited by most children and catching up to her peers within a year. Chelsea's language impairment was severely impaired – she learned some words and sometimes paired them together, but never demonstrated a consistent understanding of grammar or complex sentences.**

Suppose a black patch is projected to your left eye and a white patch is projected to your right eye. What would you consciously perceive?

**Alternating black and white patches.**

What is aphasia?

**An acquired deficit of language OR when someone has a stroke or lesion and it impairs their language abilities.**

Describe what the availability heuristic is and explain why it sometimes leads us to biased judgments.

**Estimating the frequency of events by seeing how readily/easily we can generate examples of the event. Some events may be easier or harder to retrieve for reasons other than frequency (vividness, organization of memory etc).**

Explain the advantages and disadvantages of the difference reduction method and the means-end analysis.

How do search heuristics help you solve anagrams?

Describe experimental evidence supporting the usefulness of analogies.

Describe some empirical evidence against verbal encoding of images.

**T experiment, zoom experiment**

Contrast the analogical and propositional representations of imagery

**Analogical: picture-like code, visual memory is like perception, relations represented implicitly, diff. kind of representation for each sense**

**Propositional: word-like code, visual memory is like a description of the image, relations represented explicitly, same kind of representation for each sense**

Is there evidence for a double dissociation between imagery and perception? If so, what is it?

**Yes: some patients can image but not ID, other can ID but not image**

#### **4. Visual Imagery (12 pts)**

In the Island Scanning task, Kosslyn had participants memorize a map. Then he asked them to form a mental image of the map and scan from one location to another.

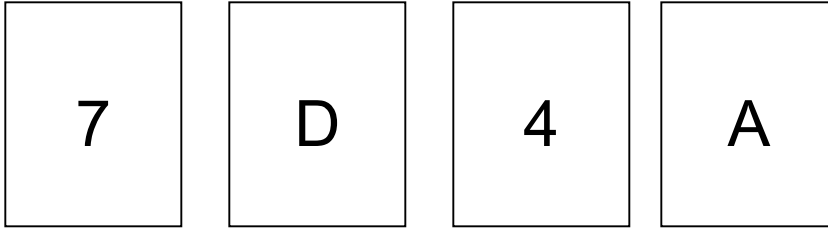
- a. What did he find? **It takes people longer to scan between locations that are farther apart.**
- b. How did he interpret this finding? **As evidence that we have pictorial or image-based mental representations of visual stimuli.**
- c. What is one alternate interpretation of this finding? **That the task had demand characteristics that prompted participants to respond more slowly on the distant location trials.**
- d. Describe a study which you believe rules out this alternate interpretation. Make sure to explain what was manipulated, what was measured and what the finding was.

#### **1. Reasoning (15 pts)**

C. 100 college students are given the following problem.

Bob says: "If a card has an even number on one side then it has a consonant on the other." Which cards would you have to turn over to find out if Bob's statement is true?





What is the logically correct answer? (1pt)

**4 and A**

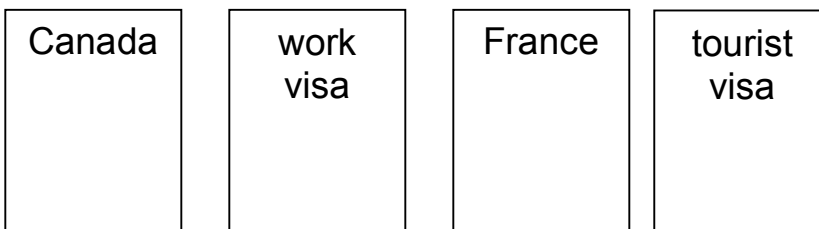
About how many of the students will give this answer? (1pt)

**4 or 5 of them.**

Which card or cards will the other students say should be turned over? Why? (2pts)

**Most students will turn over 4 because they're good at testing the mentioned conditional (modus ponens). Instead of turning over A, however, they'll turn over D, prompted by the confirmation bias.**

D. Now 100 new students are given this problem: "If you have a Canadian passport, then you must have a tourist visa to enter the country" Which passports must be checked to verify this rule?



What is the logically correct answer? (1pt)

**Canada and work visa.**

About how many of the students will give this answer? (1pt)

**Over half (any large number will do here)**

What are two distinct theories which explain why performance might be different on these two tasks? (4pts)

**The case-based reasoning theory posits that we draw on familiar experiences that match the problem that needs to be solved, helping in the second case but not the first. The pragmatic reasoning theory posits that we abstract rules from our experiences that can be applied to classes of situations, such as situations where permission is required or where there's a cause-and-effect relationship. Since the second problem fit one of these situational categories, we could apply the schema.**

