

Psychology 5054: The Psychology of Language
Spring, 2004
Midterm Exam #3

Part 1: Multiple Choice. Circle the letter corresponding to the correct answer. Only one answer is correct for each question. (1 point each)

1. Inference making in Kintsch's (1988) Construction-Integration model of discourse comprehension is a(n) _____ process.
(a) bottom-up
(b) top-down
(c) *interactive*
2. Rizzella & O'Brien (2002) found that peripheral concepts within a script-based text are more accessible than central concepts only when _____. Under all other conditions they examined, central concepts were more accessible.
(a) the number of times the peripheral and central concepts are mentioned is held constant
(b) theme relatedness is used to measure centrality
(c) *both a and b*
3. Rapp & Gerrig (2002) used reading times and overt judgments to show that readers _____ accept their preferred outcome to a story when that outcome conflicts with real-world constraints such as those imposed by time shifts.
(a) never
(b) *sometimes*
(c) always
4. Rawson & Kintsch (2002) tested memory for a target text in two groups of readers. One group read background information about the issues discussed in the target text prior to reading the text itself, the other group did not. *If* Rawson & Kintsch had found that the first group remembered the target text better on a cued recall memory test, *then* we could conclude that reading background information improves memory for the target text by _____.
(a) *facilitating the encoding of more text material*
(b) improving the organization of the encoded content
(c) neither a nor b
5. Van Berkum, Hagoort & Brown (1999) found that words which do not make sense within their _____ context elicit a large N400 response
(a) local sentence
(b) global discourse
(c) *both a and b*

6. Kaup & Zwaan (2003) found that after a sentence has been read, a concept's availability in working memory is influenced by whether it is _____. These results are consistent with the view that readers construct both a linguistic (propositional) representation of a text as well as a situation model.

- (a) mentioned in a negative phrase or an affirmative phrase
- (b) present or absent in the situation described by the sentence
- (c) **both a and b**

7. St. George, Kutas, Martinez & Sereno (1999) used functional magnetic resonance imaging (fMRI) to identify the areas of the brain involved in understanding discourse. By manipulating the availability of titles they found that as the effort required to make sense of a discourse increases, the blood flow to the _____ hemisphere increases the most.

- (a) left
- (b) **right**
- (c) neither a nor b

8. Haarmann, Davelaar & Usher (2003) designed the conceptual span task to measure the _____ component of semantic short-term memory.

- (a) **storage only**
- (b) processing only
- (c) storage-plus-processing

9. Haarmann, Davelaar & Usher (2003) observed significant correlations between their conceptual span task and _____.

- (a) the ability to detect semantic anomalies
- (b) text comprehension scores based on the Verbal Scholastic Aptitude Test
- (c) **both a and b**

10. According to Graesser, Millis & Zwaan (1997) _____ coherence is achieved if the reader can connect the incoming statement to the previous sentence or the contents of working memory.

- (a) **local**
- (b) global
- (c) both a and b

Part 2: Definitions. In just 1 or 2 sentences, give an operational definition for each of the following concepts. Your definition may come from the experiment identified in parentheses or you may make up your own definition (as long as it accurately defines the concept and is operational). (2 points each)

Grading Criteria:

- *1 pt. for correctly identifying the concept*
- *1 pt. for using a procedural definition*

11. Text Centrality (Rizzella & O'Brien, 2002)

Rizzella & O'Brien manipulated the centrality of concepts by controlling the number of times they were mentioned within a text. Each "central" concept was mentioned eight times while each "peripheral" concept was mentioned just twice.

12. Reading Time (Rapp & Gerrig, 2002)

Texts were presented to participants one sentence at a time on a computer screen and participants used a button press to advance to the next sentence. The reading time for a sentence was defined as the time that elapsed between the button press that initiated its presentation and the button press that followed.

13. Reading Span (Haarmann, Davelaar & Usher, 2003)

Participants are asked to read a list of 2 to 5 unrelated sentences out loud, then recall the last word of each sentence. The reading span can be defined as the largest number of sentence-final words that a person can recall 100% correctly at least half of the time. [Note: This method of scoring is slightly different than that used by Haarmann et al. but is more common in the research literature.]

14. Conceptual Span (Haarmann, Davelaar & Usher, 2003)

Participants are presented with a list of nine nouns, three from each of three different semantic categories, followed by the name of one of the categories (e.g., lamp, pear, tiger, apple, grape, elephant, horse, fax, phone, FRUIT?). They are required to recall all the nouns from that category (e.g., pear, apple, grape) and their conceptual span is the average number of nouns that they recall correctly.

15. Accessibility of Concepts Embedded in a Text (Kaup & Zwaan, 2003)

Participants read texts on a computer screen one sentence at a time and occasionally instead of seeing the next sentence they would see a fixation point followed by a probe word. They were required to indicate by pressing a YES or NO key as quickly as possible whether the word had occurred earlier in the text, and the average response time was used to measure the availability of concepts from the text in working memory.

Part 3: Short Essay. Answer each of the following questions using no more than half of a page for each. (5 points each)

16. Graesser, Millis & Zwaan (1997) distinguish between “on-line” and “off-line” methods for studying text comprehension. Explain this distinction and give one example of each type of method.

Grading Criteria:

- *1 pt. for characterizing on-line methods*
- *1 pt. for characterizing off-line methods*
- *1 pt. for an example of an on-line method*
- *1 pt. for an example of an off-line method*
- *1 pt. for coherence of the answer*

Example Answer:

On-line methods assess the comprehension process as it occurs. An example is measures of reading time. Off-line methods, such as free recall, assess the results of the comprehension process after that process has been completed.

17. Trabasso and van den Broek (1985) found that statements with many causal connections to other statements in a story are remembered better than otherwise similar statements with fewer causal connections. They interpret this result as evidence that readers naturally construct causal models of stories as they read. Propose an alternative explanation for this finding and design an experiment to determine which explanation is correct. Be sure to describe your independent and dependent variables, using operational definitions and/or examples where they are appropriate. What pattern of results would you expect if Trabasso and van den Broek are correct? What pattern of results would you expect if your alternative explanation is correct?

Grading Criteria:

- *2 pts. for a viable alternative*
- *1/2 pt. for describing D.V*
- *1/2 pt. for describing I.V*
- *1/2 pt. for correct prediction if original hypothesis is correct*
- *1/2 pt. for correct prediction if alternative hypothesis is correct*
- *1 pt. for overall coherence of answer*

Example Answer:

One potential alternative explanation is that the number of causal connections is confounded with the story grammar categories identified by researchers such as Mandler and Johnson (1977) who found that narrative events categorized as "settings" or "beginnings" are recalled better than "outcomes" or "attempts", which in turn are recalled better than "endings" or "reactions". If this is the case, then statements with many causal connections may be recalled better simply because they belong to more memorable story grammar categories. To find out, I would design a set of stories in which the endings (which are usually recalled poorly) have more causal connections than the beginnings (which are usually recalled well). I would then ask a group of participants to read and recall the stories. The dependent variable would be the probability of recalling the statements classified as endings or beginnings. The independent variable would be the category of the statement (ending or beginning). If Trabasso and van den Broek are correct, the endings will be recalled better than the beginnings. If the alternative hypothesis is correct, the beginnings will be recalled better than the endings.