



# My Title is Up Here: The Effect of Title Position on Situational Model Comprehension

Andriana L. Christofalos & Gary E. Raney  
University of Illinois at Chicago



## Introduction

When we read a passage, comprehension of the situation model (gist or theme) can be facilitated by presenting readers with a title that describes the theme of a passage. Bransford and Johnson (1972) examined this in an experiment in which participants were shown a picture that captured the situation described by a passage. Importantly, some participants saw the picture before listening to the passage and some saw the picture after listening to the passage. They found that free recall and comprehension ratings were better when the picture was presented before the passage compared to when the picture was presented after the passage. Their findings suggest that listeners benefited more from exposure to the situation model before listening to the passage (during initial encoding) than after listening to the passage. The purpose of our study was to assess how title position impacts multiple levels of comprehension.

## Predictions

1. Situation model comprehension would be better when the title was presented before a passage compared to after a passage.
2. Reading times would be faster when a title was presented before a passage compared to after a passage.

## Method

### Participants

Thirty-two undergraduates enrolled in Introductory Psychology courses from the University of Illinois at Chicago participated for course credit. Participants were proficient in English, which was defined as speaking, writing and reading in English in an educational setting for at least 10 years. One participant was removed from the analyses due to non-adherence to the task (not fully reading the passages).

### Materials and Procedure

Participants read vague passages in which the situation described was unclear without the title. Participants read four passages with the title presented before each passage (Title-Before condition) and then read four passages with the title presented immediately after each passage (Title-After Condition), or vice versa. Then participants answered three comprehension questions.

Figure 1. Sample passages

### Title-Before Condition

Title: Brushing Your Teeth  
Beginning in childhood individuals are specifically trained in this age-old tradition. It is important to begin the practice when you are young, as its benefits are not only immediate but long term. Indeed, the pay-off will likely continue long into old-age, and is thought by most people to be very high. For example, consistent practice in the long run may save you significant amounts of money, not to mention undue physical trauma. Gaining full profit from the process, however, is entirely dependent on one's style when completing the job. Proper form is demonstrated by the experts, although we do not always adhere to such strict instruction.

### Title-After Condition

Beginning in childhood individuals are specifically trained in this age-old tradition. It is important to begin the practice when you are young, as its benefits are not only immediate but long term. Indeed, the pay-off will likely continue long into old-age, and is thought by most people to be very high. For example, consistent practice in the long run may save you significant amounts of money, not to mention undue physical trauma. Gaining full profit from the process, however, is entirely dependent on one's style when completing the job. Proper form is demonstrated by the experts, although we do not always adhere to such strict instruction.  
Title: Brushing Your Teeth

Figure 2. Sample comprehension questions.

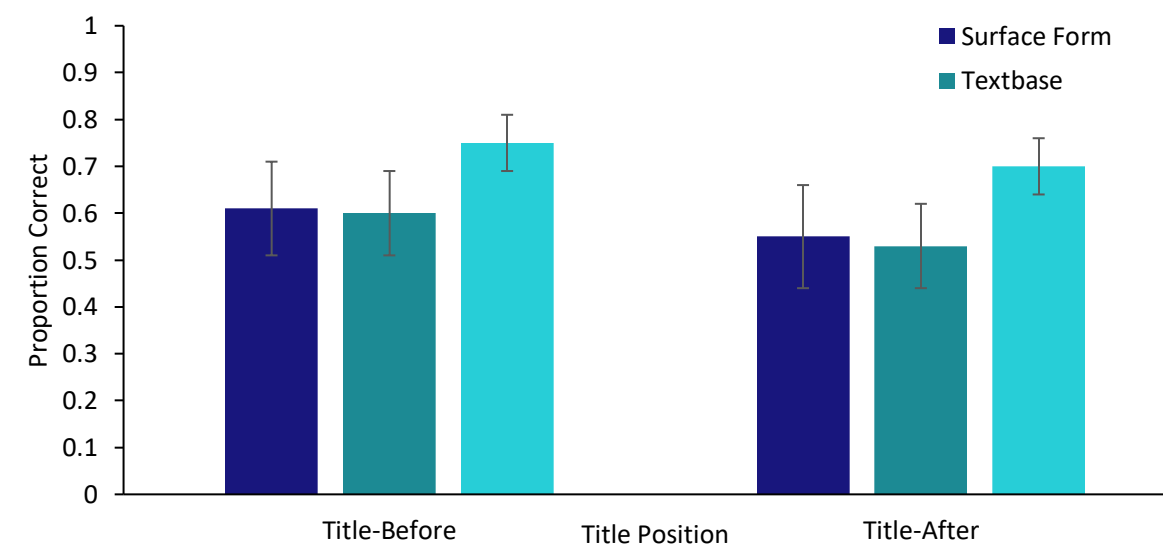
1. *Surface Form*  
Which word was in the original sentence?  
It is preferable, then, that you \_\_\_\_\_ to the experts' (dentist's) recommended daily rate.  
A) stick  
B) adhere\*  
C) follow  
D) listen
2. *Textbase*  
What is an advantage to using an electronically powered device?  
A) It reduces time needed to complete the job.  
B) It is fairly inexpensive.  
C) It is a popular tool among all people.  
D) It increases the power of doing the job.\*
3. *Situation Model*  
What is another benefit that could potentially occur by adhering to the guidelines of the practice?  
A) The results will create more wealth to all who partake.  
B) The results will be more aesthetically pleasing to all.\*  
C) The results will help the intake of liquids.  
D) The results will help with the financial planning of the future.

## Comprehension Results

A logistic mixed-effect model was performed to examine the effect of Title Position (Title-Before, Title-After) and Question Type (Surface Form, Textbase, Situation Model) on comprehension.

- No Main Effect of Title Position,  $p = .20$ .
  - Title-Before ( $M = .66, SE = .07$ ) = Title-After ( $M = .60, SE = .07$ )
- Main Effect of Question Type,  $p = .04$ .
  - Situation Model ( $M = 0.72, SE = 0.06$ ) was significantly better than Textbase ( $M = 0.56, SE = 0.09$ ),  $p = .02$ .
- No Title Position X Question Type Interaction,  $p = .75$ .

Figure 3. Mean accuracy as a function of level of comprehension and title position.



## Reading Time Results

A linear mixed-effect model was performed to examine the effect of Title Position (Title-Before, Title-After) on reading time (s).

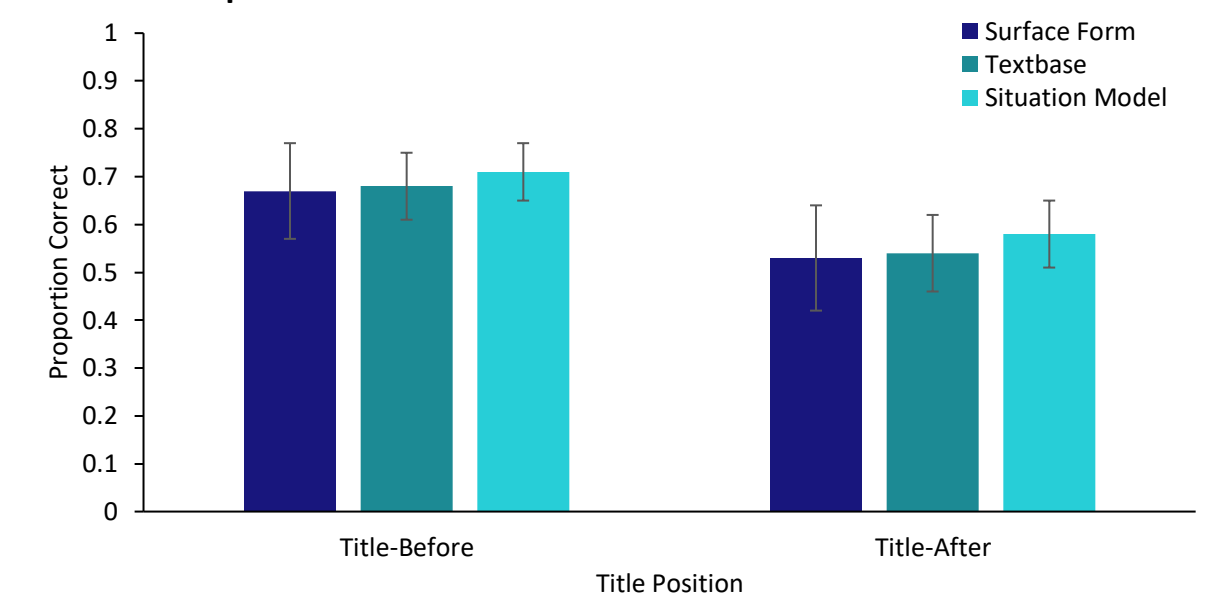
- No significant main effect of Title Position,  $p = .96$ .
  - Title-Before ( $M = 112, SE = 7.36$ ) = Title-After ( $M = 112, SE = 6.16$ )

## First Block Comprehension

A logistic mixed-effect model was performed to examine the effect of Title Position (Title-Before, Title-After) and Question Type (Surface Form, Textbase, Situation Model) on comprehension.

- Main Effect of Title Position,  $p = .01$ .
  - Title-Before ( $M = .69, SE = .06$ ) was better than Title-After ( $M = .55, SE = .07$ )
- No Main Effect of Question Type,  $p = .84$ .
- No Title Position X Question Type Interaction,  $p = .91$ .

Figure 4. Mean accuracy as a function of level of comprehension and title position for first block presented.



## First Block Reading Time

A linear mixed-effect model was performed to examine the effect of Title Position (Title-Before, Title-After) on reading time (s) for passages read in the first block condition presented.

- No significant main effect of Title Position,  $p = .41$ .
  - Title-Before ( $M = 132, SE = 9.61$ ) = Title-After ( $M = 121, SE = 10.20$ )

## Conclusions

Situation model comprehension was better in the Title-Before than the Title-After condition, but this difference did not reach statistical significance. However, interesting order effects were found; the title effect was larger for participants who read Title-After passages first. Participants who saw Title-Before passages first seemed to give up on comprehending the situation model when reading Title-After passages, which implies the titles were used strategically in this task.

Because order effects were present, we examined only the first block condition for each participant. Interestingly, the title effect was present in this analysis, such that overall comprehension was better when the title was presented before the passage compared to when the title was presented after the passage. These results are consistent with the findings of Bransford and Johnson (1972) and provide additional evidence of the processes involved in constructing a mental representation during reading.

## References

Bransford, J. D., & Johnson, M. K. (1972). Contextual prerequisites for understanding: Some investigations of comprehension and recall. *Journal of Verbal Learning and Verbal Behavior*, 11, 717-726.