An Examination of the Influence of Three Cognitive-Linguistic Variables on Children's Incidental Word Learning

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Abstract

The purpose of this study was to examine the influence of three cognitive-linguistic variables on children's incidental word learning: prior vocabulary knowledge, phonological memory, and phonological awareness. Two research questions were addressed: (a) Are prior vocabulary knowledge, phonological memory, and phonological awareness associated with word learning? And (b) Does vocabulary knowledge, phonological memory, or phonological awareness predict word learning in children? 35 typically-developing, English monolingual preschoolers were assessed on phonological memory, phonological awareness, and prior vocabulary knowledge. The novel story included 19 target words judged to be uncommon in the lexicons of older preschoolers based on the frequencies reported in Hal, Nagy, andiren (1984). The target words appeared 3 to 12 times (M = 5.4) in the story script. Children demonstrated an impressive ability to learn word meanings in the absence of ostensive reference provided by an adult. A correlation analysis revealed that prior vocabulary knowledge, phonological awareness, and phonological memory were associated with word learning. The results suggest the view that phonological awareness and prior vocabulary knowledge are associated with incidental word learning. Within the study design, it was not possible to clearly differentiate the influence of these two variables.

Methods

PARTICIPANTS

35 typically-developing, English monolingual preschoolers (M = 5.4

• 20 females, 15 males

• Age range: 4 to 5.5 years of age (M = 5.4)

PROCEDURES

Incidental Word Learning Task

A story was written to accompany the wordless picture book, Pancakes for Breakfast (Tomie dePaola). The novel story included 19 target words judged to be uncommon in the lexicons of older preschoolers based on the frequencies reported in Hal, Nagy, andiren (1984). The target words appeared 3 to 12 times (M = 5.4) in the story script. The story was read individually twice to each child, with one to seven days intervening between story readings.

Comprehension Assessment of Incidental Word Learning

Comprehension was measured at the outset of the study (pre-test) and after two readings of the story (post-test) in a picture pointing task similar to the PPVT-III. For each target word, a plate of four pictures (target, three foils) was generated from storybook.

Correlation of Predictor Variables with Post-Test

A correlation analysis revealed that prior vocabulary knowledge, phonological awareness, and phonological memory were associated with word learning. The results suggest the view that phonological awareness and prior vocabulary knowledge are associated with incidental word learning. Within the study design, it was not possible to clearly differentiate the influence of these two variables.

Results

Phonological Awareness

Children's phonological awareness was assessed with two tasks:

• Rhyme Oddity Task: Three pictures were presented: two pictures that represented words that rhymed and one picture of a word that did not rhyme (e.g., ring, big shoe). The examiner named each picture and asked the child to point to the picture that did not rhyme.

• Alliteration Oddity Task: Three pictures were presented: two pictures that represented words beginning with the same initial sound and one picture with a different initial sound (e.g., cat, kite, bee). The examiner named each picture and asked the child to point to the picture that did not begin with the same sound.

Phonological Memory

Children's phonological memory was assessed with a shortened version of the Children's Test of Nonword Repetition (CNRep; Gathercole, Willis, Baddeley, & Emslie, 1994). Test stimuli included 40 items, 10 each at two, three, and four syllables in length. Children repeated nonsense syllables presented via computer.

Vocabulary

Receptive vocabulary was assessed with the PPVT-II and expressive vocabulary with the EVT.

Discussion

Contrary to expectation, phonological memory was not correlated with post-test score. Participant scores on this measure varied and did not account for a significant amount of variance in post-test scores. The nature of the word learning task might account for the contrary finding. Whereas Gathercole and Baddeley (1990) examined word learning in an explicit word learning task, our study involved a incidental word learning task. Phonological memory may be differentially involved in these varying tasks.

To examine research question 2, two fixed-order multiple-regression analyses were conducted. As anticipated, pre-test accounted for a significant amount of variance in post-test (16.4%). When entered in the third step, phonological awareness accounted for a significant amount of variance in post-test when phonological awareness was entered as the third step. Phonological awareness, therefore, appears to be a better predictor of post-test score than does prior receptive vocabulary knowledge.

It is difficult to ascertain the unique influence of phonological awareness and prior vocabulary knowledge. If phonological awareness confers an advantage in word learning, children with better phonological awareness will have higher vocabulary scores. Further, Walley (1995) has proposed that increasing vocabulary size motivates phonological awareness development (Walley, 1993). Thus, in the preschool years, vocabulary size and phonological awareness are highly correlated. The results of this study might not accurately represent the individual effects of phonological awareness and vocabulary knowledge on incidental word learning. To further explore the relation of phonological awareness to word learning, a next step might be to conduct a study in which children undergo phonological awareness training and effects on incidental word learning are examined.

References


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