

MATERIALS AND PROCEDURE

In order to test for the child's use of morphological rules of different types and under varying phonological conditions, a number of nonsense words were made up, following the rules for possible sound combinations in English. Pictures to represent the nonsense words were then drawn on cards. There were 27 picture cards, and the pictures, which were brightly colored, depicted objects, cartoon-like animals, and men performing various actions. For reasons that will be discussed later, several actual words were also included. A text, omitting the desired form, was typed on each card. An example of the card to test for the regular plural allomorph in /-z/ can be seen in Figure 1.

The subjects included 12 adults (seven women and five men), all of whom were college graduates. Many of these adults had also had some graduate training. All were native speakers of English.

The child subjects were obtained at the Harvard Preschool in Cambridge and the Michael Driscoll School, in Brookline, Massachusetts. At the Preschool, each child was brought to the experimenter, introduced, and told that now he was going to look at some pictures. The experimenter would point to the picture and read the text. The child would supply the missing word, and the item he employed was noted phonemically. After all of the pictures had been shown, the child was asked why he thought the things denoted by the compound words were so named. The general form of these questions was "Why do you think a blackboard is called a blackboard?" If the child responded with "Because it's a blackboard", he was asked, "But why do you think it's called that?" The children at the preschool ranged between four and five years in age. Twelve girls and seven boys were asked all items of the completed test, and two groups, one of three boys and three girls and one of five boys and three girls, were each asked half of the inflectional items in preliminary testing.

At the Driscoll School, the experimenter was introduced to the class and it was explained that each child was going to have a turn at looking at some pictures. The procedure from this point on was the same as for the Preschool. All children in the first grade were interviewed. There were 26 boys and 35 girls in this group. Ages ranged from five and one half to seven years.

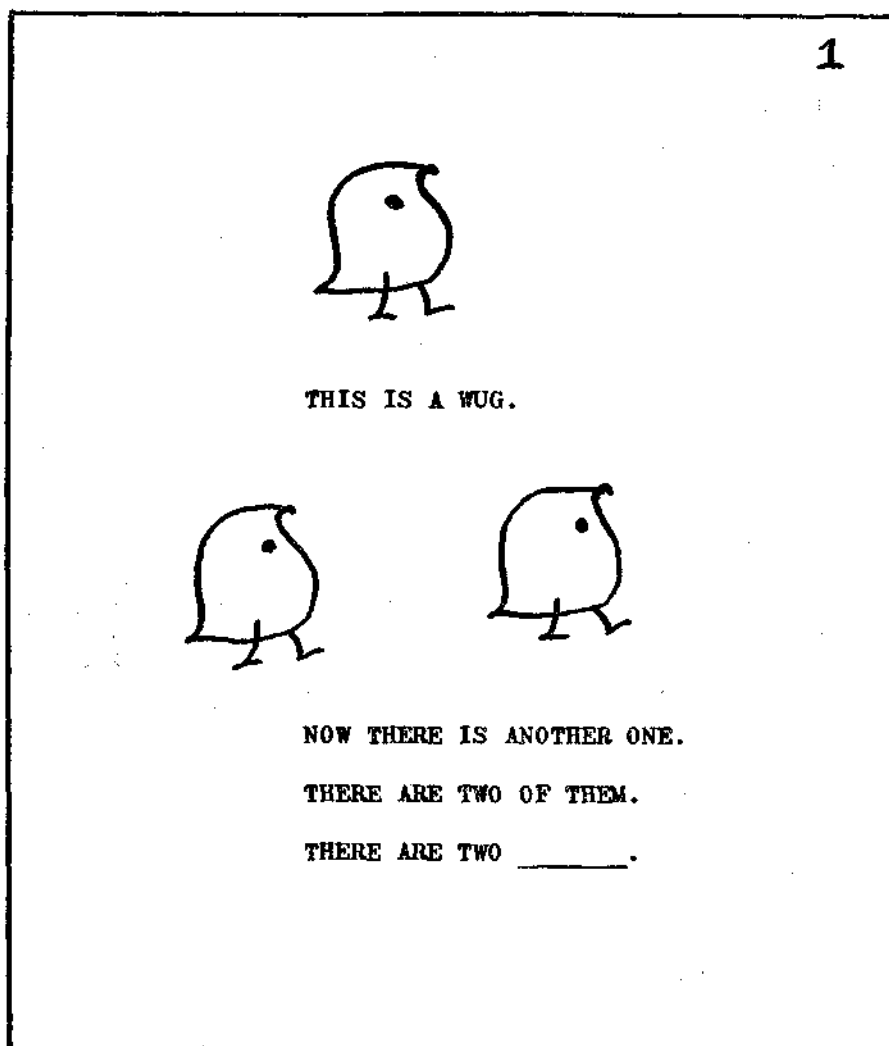


Figure 1. The plural allomorph in /-z/.

The following is the order in which the cards were presented. Included is a statement of what was being tested, a description of the card, and the text that was read. Pronunciation is indicated by regular English orthography; a phonemic transcription is included for first occurrences of nonsense words.

1. Plural. One bird-like animal, then two. "This is a wug /wʌg/. Now there is another one. There are two of them. There are two ____."

2. Plural. One bird, then two. "This is a gutch /gʌtʃ/. Now there is another one. There are two of them. There are two ____."

3. Past tense. Man with a steaming pitcher on his head. "This is a man who knows how to spow /spow/. He is spowing. He did the same thing yesterday. What did he do yesterday? Yesterday he ____."

4. Plural. One animal, then two. "This is a kazh /kæʒ/. Now there is another one. There are two of them. There are two ____."

5. Past tense. Man swinging an object. "This is a man who knows how to rick /rɪk/. He is ricking. He did the same thing yesterday. What did he do yesterday? Yesterday he ____."

6. Diminutive and compounded or derived word. One animal, then a miniscule animal. "This is a wug. This is a very tiny wug. What would you call a very tiny wug? This wug lives in a house. What would you call a house that a wug lives in?"

7. Plural. One animal, then two. "This is a tor /tor/. Now there is another one. There are two of them. There are two

8. Derived adjective. Dog covered with irregular green spots. "This is a dog with quirks /kwɜːks/ on him. He is all covered with quirks. What kind of dog is he? He is a _____ dog."

9. Plural. One flower, then two. "This is a lun /lʌn/. Now there *is* another one. There are two of them. There are Two ____."

10. Plural. One animal, then two. "This is a niz /nɪz/. Now there is another one. There are two of them. There are two ____."

11. Past tense. Man doing calisthenics. "This is a man who

knows how to mot /mat/. He is motting. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

12. Plural. One bird, then two. "This is a kra /kra/. Now there is another one. There are two of them. There are two _____."

13. Plural. One animal, then two. "This is a tass /tæs/. Now there is another one. There are two of them. There are two _____"

14. Past tense. Man dangling an object on a string. "This is a man who knows how to bod /bad/. He is bodding. He did the same thing yesterday. What did he do yesterday? Yesterday he _____"

15. Third person singular. Man shaking an object. "This is a man who knows how to naz /næz/. He is nazzing. He does it every day. Every day he _____"

16. Plural. One insect, then two. "This is a heaf /hiyf/. Now there is another one. There are two of them. There are two _____."

17. Plural. One glass, then two. "This is a glass. Now there is another one. There are two of them. There are two _____."

18. Past tense. Man exercising. "This is a man who knows how to gling /gliŋ/. He is glinging. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

19. Third person singular. Man holding an object. "This is a man who knows how to loodge /luwɔʒ/. He is loodging. He does it every day. Every day he _____"

20. Past tense. Man standing on the ceiling. "This is a man who knows how to bing /biŋ/. He is binging. He did the same thing yesterday. What did he do yesterday? Yesterday he _____"

21. Singular and plural possessive. One animal wearing a hat, then two wearing hats. "This is a niz who owns a hat. Whose hat is it? It is the _____ hat. Now there are two nizzes. They both own hats. Whose hats are they? They are the _____ hats."

22. Past tense. A bell. "This is a bell that can ring. It is ringing. It did the same thing yesterday. What did it do yesterday? Yesterday it _____."

23. Singular and plural possessive. One animal wearing a hat, then two. "This is a wug who owns a hat. Whose hat is it? It is the _____ hat. Now there are two wugs. They both own hats. Whose hats are they? They are the _____ hats."

24. Comparative and superlative of the adjective. A dog with a few spots, one with several, and one with a great number. "This dog has quirks on him. This dog has more quirks on him. And this dog has even more quirks on him. This dog is quirky. This dog is _____. And this dog is the _____."

25. Progressive and derived agentive or compound. Man balancing a ball on his nose. "This is a man who knows how to zib /zɪb/. What is he doing? He is _____. What would you call a man whose job is to zib?"

26. Past tense. An ice cube, then a puddle of water. "This is an ice cube. Ice melts. It is melting. Now it is all gone. What happened to it? It _____."

27. Singular and plural possessive. One animal wearing a hat, then two. "This is a bik /bɪk/ who owns a hat. Whose hat is it? It is the _____ hat. Now there are two biks. They both own hats. Whose hats are they? They are the _____ hats."

28. Compound words. The child was asked why he thought the following were so named. (No pictures were used for these items.)

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|---------------|-------------------|
| a. afternoon | h. handkerchief |
| b. airplane | i. holiday |
| c. birthday | j. merry-go-round |
| d. breakfast | k. newspaper |
| e. blackboard | l. sunshine |
| f. fireplace | m. Thanksgiving |
| g. football | n. Friday |

It took between ten and fifteen minutes to ask a child all of these questions. Even the youngest children have had experience with picture books, if not actual training in naming things through pictures, and no child failed to understand the nature of the task before him. It was, moreover, evident that a great number of these children thought they were being taught new English words. It was not uncommon for a child to repeat the nonsense word immediately upon hearing it and before being asked any questions. Often, for example, when the experimenter said "This is a *gutch*", the child repeated, "*Gutch*". Answers

compounding or deriving new words. They were asked what they would call a man who **zibbed* for a living, what they would call a very tiny *"wug*, what they would call a house a **wug* lives in, and what kind of dog a dog covered with **quirks* is.

Adults unanimously said that a man who **zibs* is a **zibber*, using the common agentive pattern *-er*. Only 11% children said **zibber*. Thirty-five percent gave no answer. 11 percent said **zibbingman* and 5% said **zibman*, compounds that adults did not utilize. The rest of the children's answers were real words like *clown* or *acrobat*.

For the diminutive of **wug*, 50% of the adults said **wuglet*. Others offered *little *wug*, **wuggie*, **wugette*, and **wugling*. No child used a diminutive suffix. 52% of the children formed compounds like *baby *wug*, *teeny *wug*, and *little *wug*. Two children, moreover, said a little **wug* is a **wig*, employing sound symbolism—a narrower vowel to stand for a smaller animal. For the house a **wug* lives in, 58% of the adults formed the asyntactic compound **wughouse*. Others said **wuggery*, **wugshouse*, and **wughut*. Again, no child used a suffix. The younger children did not understand this question, and where the older children did, they formed compounds. 18% of the first graders said **wughouse*. Others suggested *birdcage* and similar forms. What emerges from this picture is the fact that whereas adults may derive new words, children at this stage use almost exclusively a compounding pattern, and have the stress pattern^M at their disposal: the adults unanimously said that a dog covered with **quirks* is a *"quirky* dog. 64% of the children formed the compound ** quirk dog* for this item, and again, no child used a derivational suffix.

ANALYSIS OF COMPOUND WORDS

After the child had been asked all of these questions calling for the manipulation of new forms, he was asked about some of the compound words in his own vocabulary; the object of this questioning was to see if children at this age are aware of the separate morphemes in compound words. The children's explanations fall roughly into four categories. The first is identity: "a blackboard is called a *blackboard* because it is a blackboard." The second is a statement of the object's salient function or feature: "a blackboard is called a *blackboard* because you write on it." In the third type of explanation, the salient feature

happens to coincide with part of the name: "a blackboard is called *a. blackboard* because it is black;" "a merry-go-round is called a *merry-go-round* because it goes round and round". Finally, there is the etymological explanation given by adults—it takes into account both parts of the word, and is not necessarily connected with some salient or functional feature: "Thanksgiving is called *Thanksgiving* because the pilgrims gave thanks."

Of the children's answers, only 13 % could be considered etymological. Most of their answers fell into the salient-feature category, while the number of identity responses dropped from the younger to the older group. Many younger children offered no answers at all; of the answers given, 23 % were identity. Of the older children, only 9 % gave identity answers, a difference that was significant at the 1 % level.

As we might expect, the greatest number of etymological responses—23 %—was given for *Thanksgiving*, which is an item that children are explicitly taught. It must be noted, however, that despite this teaching, for 67 % of the children answering this item, Thanksgiving is called *Thanksgiving* because you eat lots of turkey.

The salient feature answers at first seem to have the nature of an etymological explanation, in those instances where the feature coincides with part of the name—72 % of the answers, for instance, said that a fireplace is called a fireplace because you put fire in it. When the salient feature does not coincide with part of the name, however, the etymological aspects also drop out. For *birthday*, where to the child neither the fact that it is a day nor that it is tied to one's birth is important, the number of functional answers rises: it is called *birthday* because you get presents or eat cake. Only 2 % said anything about its being a day.

The child approaches the etymological view of compound word through those words where the most important thing about the word so far as the child is concerned coincides with part of the name. The outstanding feature of a merry-go-round is that it does, indeed, go round and round, and it is the eminent appropriateness of such names that leads to the expectation of meaningfulness in other compound words.

Although the number of etymological explanations offered by the children was not great, it was clear that many children have what amounts to private meanings for many compound words. These meanings may be unrelated to the word's history, and

unshared by other speakers. Examples of this can be seen in the following.

"An airplane is called an *airplane* because it is a plain thing that goes in the air."

"Breakfast is called *breakfast* because you have to eat it fast when you rush to school."

"Thanksgiving is called that because people give things to one another." (Thingsgiving?)

"Friday is a day when you have fried fish."

"A handkerchief is a thing you hold in your hand, and you go 'kerchoo'."

These examples suffice to give the general nature of the private meanings children may have about the words in their vocabulary. What is of additional interest, is that the last explanation about the handkerchief was also offered by one of the college-graduate adult subjects.

We must all learn to handle English inflection and some of the patterns for derivation and compounding. So long as we use a compound word correctly, we can assign any meaning we like to its constituent elements.

CONCLUSION

In this experiment, preschool and first grade children, ranging from four to seven years in age, were presented with a number of nonsense words and asked to supply English plurals, verb tenses, possessives, derivations and compounds of those words. Our first and most general question had been: do children possess morphological rules? A previous study of the actual vocabulary of first graders showed that they know real items representing basic English morphological processes. Asking questions about real words, however, might be tapping a process no more abstract than rote memory. We could be sure that our nonsense words were new words to the child, and that if he supplied the right morphological item he knew something more than the individual words in his vocabulary: he had rules of extension that enabled him to deal with new words. Every child interviewed understood what was being asked of him. If knowledge of English consisted of no more than the storing up of many memorized words, the child might be expected to refuse to answer our questions on the grounds that he had never before heard of a **wug*, for instance, and could not possibly give us the plural form since no one