

Truck-driver, Driver-truck? But Why Not Truck-drive?

Compounds and Children

A compound is when you put together two independent words to form one word (e.g., green-house, blue-jay, book-shelf). Some examples are: chalkboard (two nouns), blue-jay (adjective-noun), truck-driver (“synthetic,” or made-up). We are interested in the last type of compound.

We are looking at how children learn to form these “made-up” compounds. Other researchers have shown that children learning to use compounds go through stages. We also know that they say certain forms of compounds (drive-truck, driver-truck) during this development, but never produce other forms (truck-drive). We also know that they are at least 5 years old when they know how to use these synthetic compounds.

How to Make a Compound

Previous studies have predicted that when we try to build new compounds, the steps in our heads might be either like this:

- (1) 1. throw-bug
2. bug-throw
3. bug-thrower

or something like this:

- (2) 1. throw-bug
2. thrower-bug
3. bug-thrower.

So which one might it be?

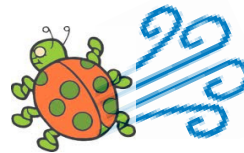
Some linguists think that in their heads, children actually have the same rules as adults for constructing compounds, and that these errors (like throw-bug) that they make are actually a smaller part of this one big rule. So they think that children go through each step of this big rule as they learn how to use it, which might be why children say things like throw-bug and thrower-bug before they learn to correctly say bug-thrower.



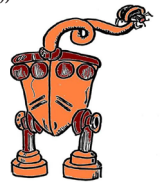
So, if we observe what children of different ages say to describe a “bug-thrower,” in the end, we might be able to find out what rules adults rely on to produce compounds. We also wanted to check the results of other researchers’ experiments by more carefully looking at what kind of verbs we used in the compounds, etc. Because, you know, other factors may be affecting how children describe a machine that throws bugs!

Our Experiments

In one experiment, we took 3 year olds, 4 year olds, and 5 year olds and had them answer a question like this: **“This is a machine that always throws bugs. What could we call a machine that throws bugs?”**



A bug throwing machine-->



In another experiment, we took 3, 4, 5 year olds again and said something like this to them: **“Because this machine throws bugs, we’re going to call it a bug thrower/bug-throwing-machine. Can you tell the monkey what we’re going to call it?”**

In the first experiment, we found that 3 year olds mostly said “bug-man,” 4 year olds used “throw(er)- bug,” and 5 year olds tended to say “bug-thrower.” Importantly, none of the kids said “bug-throw.” According to this, it looks like the steps for building a new compound might be more like (2) above!

From the second experiment, we also found that children repeated compounds with -ing (bug-throwing-machine) less accurately than they did with -er verbs (bug-thrower). This was the exact opposite of what some of the other researchers have found in the past—it really could be that how they got the children to say the compounds, as well as other nit-picky factors, may have affected their results!

How Can These Results Help Us?

Compounding is a useful way to make new words. If we find out more about how exactly children acquire compounds, in the future, it might help in making standardized tests for language development!

Green HOUSE, GREEN House-- I See What You Did There!



Compounds and Stress

Green house—what does that mean to you? A house painted green, or a place where plants are grown? To distinguish between these two meanings, English speakers rely on prosody (the “music” of language, such as intonation and rhythm), particularly stress and timing. That is, where you put the emphasis in green house determines what is meant by it.

So, when you say “green *house*,” it’s a phrase—a house that is green. When you say “*green* house,” it’s a compound—where plants are grown. As we said in the previous section, a *compound* is when two independent words are put together to make a new word.

What Do Our Eyes Say about RED-Cups?

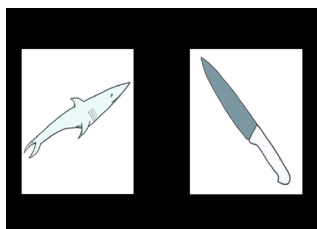
Other researchers have found that when people hear a made-up compound (such as *red-cup* to mean a red flower), they treat them as phrases (a literal red *cup*) regardless of the stress on the first word.

In our Acquisition Lab, we used what’s called *eye-tracking* to look at this phenomenon further. We took 24 adults, and they were presented with two images. They disappeared, and then reappeared with an audio prompt that said “Look at the...[compound word].” Some of these were real compounds, and some were made up.



<-- Real compounds.
BIG wig vs. big WIG

Invented compounds. -->
WHITE knife vs. white KNIFE

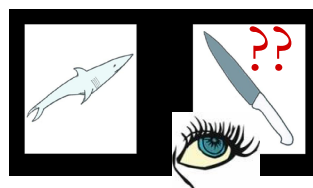


The audio would sometimes put the emphasis on the first word, and other times it put emphasis on the second word. Depending on what they heard, the participants had to select an image (of the two) that they thought the audio was describing. When the audio was played, the participants’ eye movement (where they were looking, and for how long) was recorded with a special device. We also recorded if they chose the right image, and how long it took for them to answer.

What We Found Out

Like in the other studies, we found that participants did not effectively rely on where the stress in a new compound was in order to distinguish its meaning. They were less accurate and slower in giving responses for these, and they tended to look longer at the images—which usually was the incorrect image, too!

“WHITE Knife”



What does this mean? Well, it provides more evidence that when we’re given a made-up compound, we have a hard time telling that it’s actually a compound; and this is regardless of if we hear the difference in how it’s said. We like to treat it as a straight-forward, literal phrase, and our eye movement seem to tell us this, too!

About the Lab

The MSU Acquisition Lab does research in child first language acquisition, with a particular focus on the acquisition of sentence structure and meaning, and the comparison of acquisition pattern in many languages including Spanish, Portuguese, English, Chinese and Japanese.

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