

Word-learning & categorization

- After a child has learned the meaning for a new noun, how does that generalize?
- Or what other things are considered the same?

An experiment

Training phase:

"This is a dax."



Test phase:

"Show me the dax."



Image source: Indiana University and Michael Gasser

Experiment results

- Children tend to pick the object that matches the original object in shape, rather than material, color, or texture.

– the shape bias



- Not all categories of objects in the world really work like this, so this bias can be wrong.

– Ex: Sponge, wood




Image source: L. Samuelson, University of Iowa

Material biases

- By the time children reach 36 months of age, shape bias is only for solid objects.
- When the object is made from a nonsolid substance (such as hair gel or face cream), children generalize on the basis of material.

Why these biases?

- Words typically known by 30 month olds include all possibilities:

- Nonsolid things based on shape: bubbles 
- Nonsolid things based on material: pudding
- Solid things based on material: wood 
- Solid things based on shape: ball, bottle
- Items based on both shape & material: muffins, crayons
 - Samuelson & Smith (1999) 

Images: www.yale.edu/opa/imagegallery/commencement/source/3.html, Marc Brown, pbskids.org/arthur/growmapartyideas/print & www.as220.org/access/programs.html

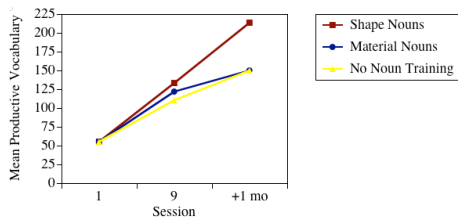
Children's words

- Young children's first words contain
 - More words for solid objects
 - More words organized by shape
 - And these overlap to a great extent

But which came first?

- Shape bias doesn't occur until children have about 150 words.
- But, learning this bias then increases vocabulary learning
 - Training study

Results, vocabulary learning



Data from L. Samuelson

Clinical implications?

- A few researchers have begun examining this in relation to late talkers.
- There is some evidence to suggest that these late talkers make more dramatic gains as a result of this strategy than do typically-developing children
 - Staley & Weiss, 2001
