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The Language Advantage: how language could help your child categorize

Language Development Lab



Le Laboratoire du
Développement du Langage

By: Audrey-Ann Deneault Supervisor: Christopher Fennell

Introduction

Young infants prefer human speech to other audio stimuli (e.g., tones). Ferry, Hespos & Waxman found that language helps 3 to 6 months old categorize objects in comparison to tones. Also, a shift occurs from 3 to 4 months of age, where infants go from preferring to look at a familiar object at test to a novel object preference.

Familiarity preferences indicate less mature processing (i.e., they continue to look at a familiar object because they have yet to finish processing its details). So far only English monolinguals have been studied. Would the same patterns of development be found in bilingual young infants?

Method

Participants

- 3 age groups: 3, 4, and 6 months old
- Tested so far: 6 babies (M=5.48, SD=0.98). They were part of two groups: 4-month-old (M=4.61, SD=0.38) and 6-month-old (M=6.32, SD=0.20)
- Goal: 24 babies per condition (12 monolinguals and 12 bilinguals)
- Recruitment through various ways, namely the Ottawa Baby Show, Facebook, and word of mouth

Stimuli

- 8 different pictures of dinosaurs or fishes
- English or Cantonese audio stimulus
- Pictures of fish and dinosaur presented at the same time

Procedure

Trial	Words played	Left Screen	Right Screen
Familiarization 1	Look at the toma! Do you see the toma?		
Familiarization 2	Look at the toma! Do you see the toma?		
Familiarization 3	Look at the toma! Do you see the toma?		
...	...		
Familiarization 8	Look at the toma! Do you see the toma?		
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Test 1			
Test 2			

Discussion

- The results are in opposition to what we expected and what was found by Ferry, et al.
- 4 months old did not have any preference, meaning that they were not able to categorize.
- 6 months old had a familiarity preference. They therefore categorized the objects, but this preference suggests that they still needed time to process the categories.
- The differences between our data and those of Ferry, et al. may be due to our use of their audio stimuli, which is in an American accent. Infants can be sensitive to accent differences (Schmale & Seidl, 2009).
- The results will be more significant once our sample grows in size: this sample might not be representative.

Results

- During the first test trial, all the babies had a familiarity preference (p=0.04). In average, they looked towards the familiar picture 62% of the time.
- For the second test trial, babies did not look more towards one side or the other (Familiarity: 54% vs. Novelty: 46%)
- 4 months old did not have a preference in any trial.
- 6 months old had a familiarity preference in the first trial (p=0.041, Familiarity: 62%).
- For the average of both trials, 6 months old had a strong familiarity preference (p=0.002).

References

- Ferry, A., Hespos, S., & Waxman, S. (2010). Categorization in 3-and-4-Month-Old Infants: An Advantage of Words Over Tones. *Child Development*, 81(2), 472-479
- KovackLesh, K. A., Oakes, L. M., & McMurray, B. (2012). Contributions of attentional style and previous experience to 4-month-old infants' categorization. *Infancy*, 17(3), 324-338.

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- Any requests or questions should be addressed to: ldl@uottawa.ca