

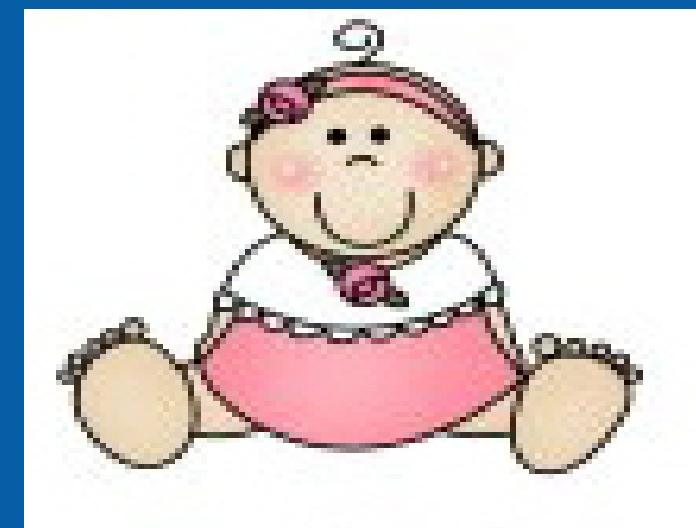
# The ontogenetic development of infants' ability to use referential cues to establish word-referent mappings

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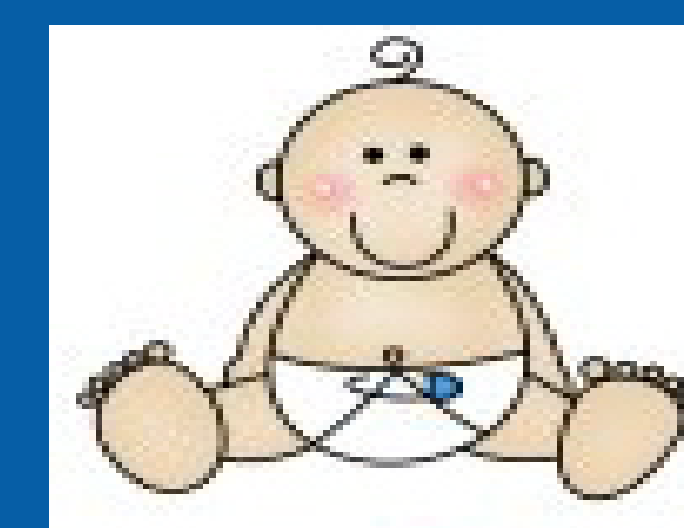
## Introduction

- Babies will learn word-object associations better if they have name-training prior to a word learning task (Namy & Waxman, 2000; Fennell & Waxman, 2010)
- Name-training teaches participants that isolated words can refer to objects in the context of the task. A word that the baby knows is aurally presented in isolation while its image is presented on a screen. This is repeated several times, and thus when the baby is presented with an isolated novel word, he can map this word to its referent (i.e., novel object) more successfully.

## Participants



- Projected N = 12 (balanced for gender)
- Age = 6 months
- Inclusion criterion: participants had to comprehend at least 1 of the 4 training words (as measured by the MacArthur-Bates Communicative Development Inventory, or MCDI)



## Projected Results

- If 6-month olds are able to successfully map the novel words (fep and wug) to their visual referents after a name-training condition, it will be the first time that infants this young have been able to learn words in a laboratory setting. It will show that infants can learn words if they are trained properly so that they realize what task is expected of them. In past studies such as Gogate & Bahrack (1998), the playing of the auditory stimuli was matched up to the visual stimuli hitting the edge of the screen. The current study does not have this audio-visual matching, and will thus be the first time infants learned words without those cues.
- However, if 6-month olds are unable to successfully learn the word-object pairings then further study of increasingly older infants is required. Participants who are 8, 10, and 12 months will be tested until one of the age groups has success.

## Stimuli

- The potentially familiar words "bottle", "baby", "doggy", and "car" were chosen because of their relatively high comprehension percentages by 8 month olds (the youngest age group in the MCDI). The words' percentages were 57%, 28%, 38%, and 24% respectively. These 4 words along with their prototypical images were used for the word-object pairs in the training phase.
- The nonsense words "fep" and "wug", along with images of unique, unfamiliar objects were used for the word-object pairs in the habituation and test phases.
- Auditory stimuli were recorded by a Canadian English-speaking female using infant-directed speech (baby-talk). The stimuli were analyzed for intonation and duration, and then matched on those factors. The "fep" and "wug" stimuli are as similar as possible so that they cannot be distinguished based on duration alone; the mean duration of "fep" is 0.894 seconds, and the mean duration of "wug" is 0.869 seconds.
- Visual stimuli moved linearly across the screen; the auditory stimuli were not matched to the timing of the visual stimuli's movements.

## LEARNING WORD-OBJECT ASSOCIATIONS

- Infants as young as 7 months have been shown to learn vowel-object pairs in a laboratory setting when the auditory stimuli are synchronous with the visual stimuli hitting the edge of the screen (Gogate & Bahrack, 1998)
- Curtin (in press) has had success with word-object associations in 12-month olds using the nonsense words "fep", "wug", and "dax"

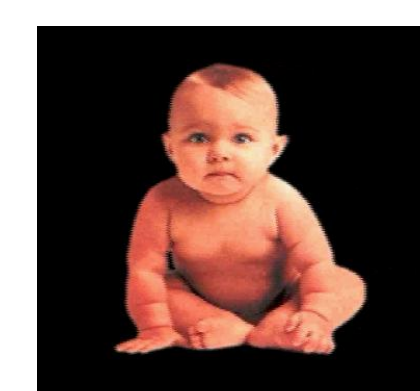
## SEEKING SUCCESS AT ITS YOUNGEST

- As demonstrated by looking patterns during video footage of their parents as compared to footage of unknown men and women, 6-month olds comprehended the terms "mommy" and "daddy" in a laboratory setting (Tincoff & Jusczyk, 1999). Therefore, 6-month old infants will be the youngest age group to participate in the current study.
- Important for understanding the mechanisms by which infants acquire language, and may have implications for teaching new words. Also, this would be the earliest demonstration of **novel** word learning in a laboratory setting.

## Procedure

- Infants sat on their parents' lap in the testing room and the experimenter sat in an adjoining control room. A video camera enabled the experimenter to see what was happening in the testing room in order to control the trials according to the infants' habituation (habituation ended when looking time across a 2-trial block decreased to 65% of the longest block, with a maximum of 24 trials). The experimenter coded the looking behavior throughout the sessions.
- Using potentially familiar words, the **training phase** taught participants to associate words heard in isolation to the referent being shown on the screen
- The **habituation phase** taught participants the novel words "fep" and "wug"
- In the **test phase** participants were exposed to both same and switch trials to verify that looking times were longer in the switch trials, demonstrating proper word-referent mapping of the novel word-object pairs
- The order of presentation during training and test was counterbalanced

### Training Phase



"BABY"



"CAR"

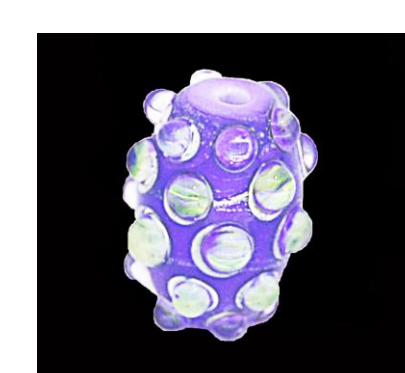


"DOGGY"



"BOTTLE"

### Habituation Phase

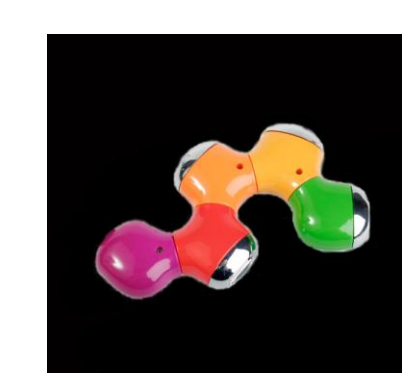


"FEP"



"WUG"

### Test Phase



"WUG"  
Same



"FEP"  
Switch

## References

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