

# Spontaneous implicit naming of visual objects

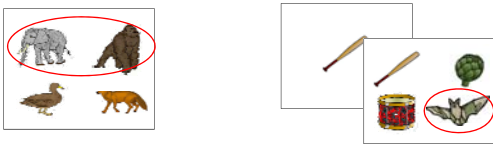
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## Multiple Uses for Language

- Communication
- Supports other non-communicative cognitive functions
  - E.g. working memory
- Is language used for these functions in young children?
  - Possible evidence: late emergence of linguistic-relativity effects (Lucy & Gaskins, 2003)
  - If not, can this explain differences in language processing?

## Spontaneous Implicit Naming

- Activation of word forms in non-communicative contexts
  - Not due to speech planning or comprehension
- Evidence from adults
  - Look longer when encoding pictures with longer names for a recognition memory test (Zelinsky & Murphy, 2000)
  - Look longer at pictures that are homophonous with the target in visual search (Meyer et al., 2007)



## Development of Implicit Naming

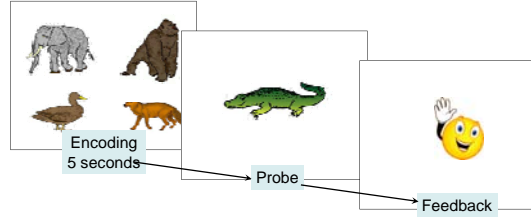
- Positive evidence from 24 month olds (Mani & Plunkett 2010)
  - Phonological priming from a picture presented without a verbal label to a labeled target (CUP → “cat”)
- Evidence against implicit naming in young children
  - Lack of phonological similarity effects in short term memory tasks (Conrad, 1971)

## Current study

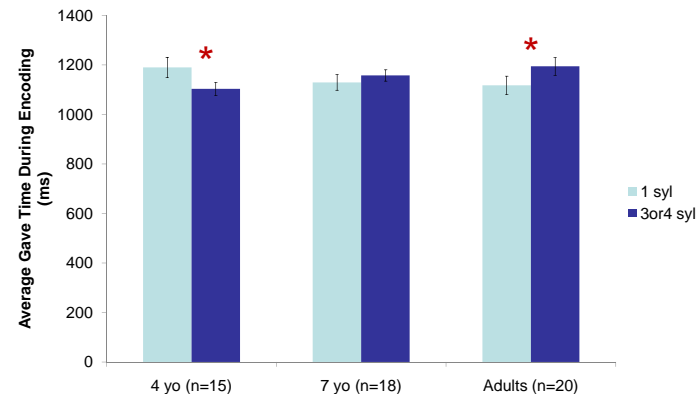
- Recognition memory paradigm from Zelinsky and Murphy (2000)
- Probe verbalization during encoding using eye tracking

## Experiment 1

- Adults, 4 year olds and 7 year olds
- 10 one-syllable and 10 three/four syllable items
  - RT in categorization task faster for longer name items (adults)
  - Checked accuracy of naming in separate sample of 5 year olds
  - Naming post-test for 4 and 7 year old participants
- 40 trials
  - 2 one-syllable and 2 three/four syllable items on each trial
  - Encode display for 5 seconds – eye tracking
  - Probe immediately appears – yes/no response



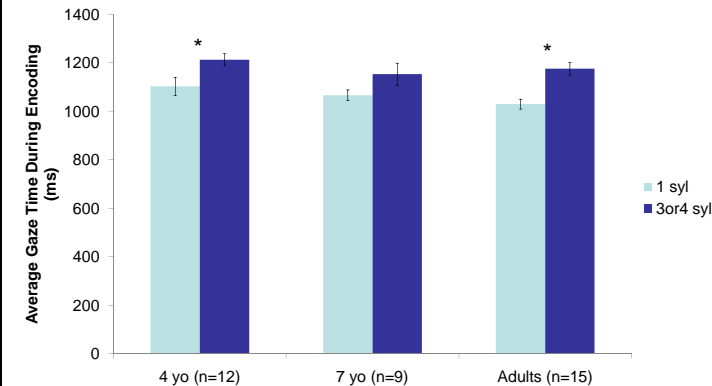
- Results
  - Accurate trials only
  - Three 4 year olds excluded for low accuracy (80% criterion)
  - Two adults and one 4 year old excluded for poor eye-tracking



- Adults look longer at items with longer names ( $p < .05$ )
- Surprisingly, 4 year olds show the opposite pattern ( $p < .05$ )
- No difference between conditions for 7 year olds

## Experiment 2

- Is this paradigm sensitive to verbalization in children?
- Repeat experiment with explicit instructions to name items during encoding
- Excluded four 4 year olds and one 7 year old for poor eye tracking; one 4 year old excluded for low accuracy



- All age groups look longer at items with longer names
  - ( $p < .05$  for adults and 4yo,  $p = .07$  for 7yo)
- Paradigm is sensitive to naming
  - Supports interpretation that only adults implicitly named items in Experiment 1

## Discussion

- Unlike adults, 4 year olds did not appear to implicitly name pictures presented in Exp. 1
- Maybe implicit naming just isn't efficient for children?
  - Collected naming latency from some Exp 2 participants
  - 4 year olds are approx. 50% slower to retrieve names
- Future and ongoing studies
  - Under what conditions do children spontaneously retrieve object names?
  - Does implicit naming mediate the effects of visual context on language processing in adults?
  - Can this account for the absence of context effects in children (Trueswell et al., 1999)

## References

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