

# LING5702: Lecture Notes 21

## Learning Words

Until now we've looked at what language is and how it works.

Now we ask: how do babies learn it? The below experiments suggest they use statistics!

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#### 21.1 Acquisition of word segmentation [Saffran, 2001]

[Saffran, 2001]: see whether infants learn words in context

- **subjects:** infants aged 7 months, 3 weeks to 8 months, 2 weeks
- **stimuli:** subjects were exposed to synthesized sequences of 180 nonsense words:
  - ‘*bidaku padoti golabu bidaku ...*’ (+ random lights, for interest)

No pauses between ‘words’, but syllables have characteristic transition probabilities:

$$P(\text{do} \mid \text{pa}) = 1, \quad P(\text{ti} \mid \text{do}) = 1, \quad P(\text{pa} \mid \text{ku}) = .33$$

Then subjects were played stimuli and their gaze was measured:

1. a central light was lit until fixation;
2. then a side light was lit until fixation;
3. the side light remained on and audio played until the subject looked away:

- (a) ‘*I like my padoti*’ (English context with ‘word’)
- (b) ‘*I like my kupado*’ (English context with non-‘word’)
- (c) ‘*zy fike ny padoti*’ (Nonsense context with ‘word’)
- (d) ‘*zy fike ny kupado*’ (Nonsense context with non-‘word’)

- **measure:** side light fixation time
- **results:** subjects prefer (look longer at) ‘words’ in English,  
subjects prefer non-words in Nonsense context

### References

[Saffran, 2001] Saffran, J. (2001). Words in a sea of sounds: The output of infant statistical learning. *Cognition*, 81, 149–69.