LING5702: Lecture Notes 18
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!

Contents

18.1 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(do | pa) = 1,   P(ti | do) = 1,   P(pa | 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.