Jaques Mehler & al ’88: prenatal learning of language patterns

- **subjects:** two-day-old infants
- **stimuli:** bilingual speaker, speaking French and Russian
- **measure:** suck rate on pacifier monitor
- **results:** subjects prefer their native language
Peter Jusczyk & Richard Aslin ’95: 7 1/2-month-olds recognize familiar words

- **subjects:** infants aged 31wks to 35wks / 23wks to 27wks
- **stimuli:**
  1. 30 seconds of recordings of e.g. either ‘cup’ or ‘bike’ (interrupted if infant looked away from speaker)
  2. central light until fixation (judged by observer with headphone music);
  3. side light until fixation;
  4. side light and audio until look away:
     - ‘The cup was bright and shiny.’
     - ‘A clown drank from the red cup.’
     - ‘The other one picked up the big cup.’
     - ‘His cup was filled with milk.’
     - ‘Meg put her cup back on the table.’
     - ‘Some milk from your cup spilled on the rug.’

- **measure:** side light fixation time
- **results:** 7 1/2 mos prefer (look longer at) familiarized words
  6 mos have less (not significant) preference
Jenny Saffran ’01: infants learn words in context

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

\[
P(\text{do} | \text{pa}) = 1, \quad P(\text{ti} | \text{do}) = 1, \quad P(\text{pa} | \text{ku}) = .33
\]

then:

1. central light until fixation;
2. side light until fixation;
3. side light and audio until look 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
Babies can distinguish prosody and metric rhythm...

Elizebeth Hohne & Peter Jusczyk ’94: 2mos are sensitive to prosody

- **subjects:** two-month-old infants
- **stimuli:** manipulated allophones in recordings: ‘nitrates’ / ‘night rates’
- **measure:** suck rate on pacifier monitor
- **results:** subjects can distinguish normal allophones from manipulated

Cristiane Weber & al ’04: 5mos can distinguish metric rhythm

- **subjects:** four-month-old and five-month old infants
- **stimuli:** sequences of iambic words w/wo trochaic mixed in
- **measure:** ERP
- **results:** significant distinction for 5mos, but none for 4mos
Peter Jusczyk, Derek Houston & Mary Newsome ’99: metric segmentation

- **subjects:** 7½ mo infants
- **stimuli:** 30 seconds of recordings:
  - (a) ‘kingdom’ and ‘hamlet’ (trochaic)
  - (b) ‘doctor’ and ‘candle’ (trochaic)

(interrupted if infant looked away from speaker)

then:

‘Your kingdom is in a faraway place. The prince used to sail to that kingdom when he came home from school. One day he saw a ghost in this old kingdom. The kingdom started to worry him. So he went to another kingdom. Now in the big kingdom he is happy.’

- **measure:** fixation time in conditioned head turn procedure
- **results:** 7½ mos prefer (look longer at) familiar words
Peter Jusczyk, Derek Houston & Mary Newsome ’99 (cont’d):

- **subjects:** $7\frac{1}{2}$mo / 9mo infants (two experiments)

- **stimuli:** 30 seconds of recordings:
  - (a) ‘guitar’ and ‘device’ (iambic)
  - (b) ‘beret’ and ‘surprise’ (iambic)

(interrupted if infant looked away from speaker)

then:

‘The man put away his old guitar. Your guitar is in the studio. That red guitar is brand new. The pink guitar is mine. Give the girl the plain guitar. Her guitar is too fancy.’

- **measure:** fixation time in conditioned head turn procedure

- **results:** 9mos prefer familiar words, $7\frac{1}{2}$mos do not
Babies can also use phonotactics in segmentation!

English allows word breaks: (here) /s/ (here) /p/ (here) /l/ (not here)

Peter Jusczyk & al ’93:

- **subjects**: 6mo / 9mo infants
- **stimuli**: English / Dutch word lists (similar trochaic prosodic system)
- **measure**: fixation time in conditioned head turn procedure
- **results**: 9mos preferred native language, 6mos did not
For next time... 

Read:

- Traxler ch 9, pp. 343–360