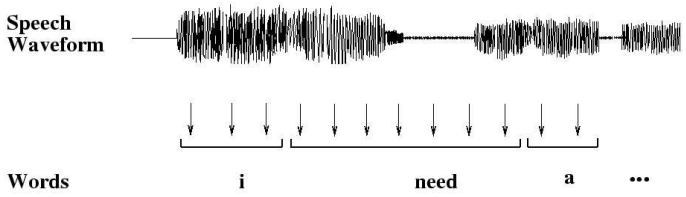
Computation, Information, and Intelligence (ENGRI/CS/INFO/COGST 172), Spring 2007
4/20/07: **Lecture 36 aid — Human statistical learning**

Topics: Jenny Saffran, Richard Aslin, and Elissa Newport's 1996 *Science* paper on statistical learning by 8-month-old infants. Online access available through Cornell at
http://links.jstor.org/sici?sici=0036-8075%2819961213%293%3A274%3A5294%3C1926%3ASLB8I%3E2.0.CO%3B2-Y .

Announcements: The Math 192 final is Tuesday May 15, 7:00-9:30 pm (I am not sure this is the same information that some students in the class told me.)

I. Example speech waveform and transcription This is an edited version of Figure 7.2 of Jurafsky and Martin (2000).[1]



"There is no invariant acoustic cue to word boundaries present in all languages" (pg. 1927, references to Christophe et al. (1994) and Cutler and Carter (1987)).

II. What are 8-month-olds like? On average, they ...

- have been able to sit up for a month
- may babble "ma ma" or "da da" but not discriminatively
- have started to look for objects when dropped
- exhibit the "A not B" phenomenon

III. Experimental data The words are all spoken by a speech-synthesis system that provides no stress, intonation, pause, or timing cues as to word boundaries.

Training words:	pabiku, tibudo, golatu, daropi.
Test "words":	pabiku, tibudo, tudaro, pigola

IV. Additional notes:

- A ten-second sound clip from the Saffran, Aslin, and Newport (1996) training data is available here: http://oak.psych.gatech.edu/∼spieler/intro/stream.wav . You download it and replay it in repeat or loop mode.
- A movie clip of an infant undergoing a very similar experiment to what we described is available here: http://www.waisman.wisc.edu/infantlearning/media/Language.mpg . The duration of fixation is very clear.

[1] The authors have provided the figures online and given express permission to others to employ said figures in handouts and the like.