Supporting Online Material for

**Visual Language Discrimination in Infancy**

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- Materials and Methods
- Reference

Other Supporting Online Material for this manuscript includes the following:
available at www.sciencemag.org/cgi/content/full/316/5828/1159/DC1

- Movies S1 and S2
Materials and Methods

Subjects

The final sample included 96 healthy, full-term infants. Additional infants were excluded for failure to habituate (7), fussiness (15), parental interference (7), distraction (3), and experimenter error (1). Each condition, [monolingual, bilingual (exposed to at least 25% English and French according to parental estimates) and control] included 12 infants per age. Infants were tested at 4 months (3.87–5.17m, M=4.5m), 6 months (5.97–7.17m, M=6.57m) and 8 months (7.77–9.2m M=8.43m).

Stimuli

Silent video clips were recorded using three bilingual French/English speakers who recited sentences from “The Little Prince/Le Petit Prince”. Sentences from both languages were recited by each speaker. Each clip consisted of 1 bilingual speaker reciting a different sentence in either English or French. A colourful expanding and retracting ball attracted the infant’s attention toward the screen for the start of every trial.

Apparatus

The infants were seated on their parent’s lap in a sound attenuated room approximately 4 feet from a 27-inch TV screen. The parents wore blackened sunglasses to prevent them from viewing the visual clips and potentially influencing their infant. The experimenter controlled the study from a separate room, and watched the infant’s looking responses via a closed circuit camera. The experimenter pressed a key whenever the infant looked at the stimuli. The presentation of the stimuli, storage of online looking time, and calculation of the habituation criterion were run using Habit 2000 software (1).
The experimenter was thus blind to the timing of the change from habituation to test trials.

**Procedure**

The infants were habituated by successively presenting clips (each clip contained a different sentence) from one of the languages until the infant’s looking time across three trials declined to a preset criterion of 60%. Each trial lasted a maximum of 16 seconds, but terminated when the infant looked away for more than 2 seconds (indicating boredom with the particular clip). The trials were organized into blocks of three so that the infants always watched the same speakers in the same order across the habituation and test trials. The infants could habituate in as few as six trials, but a maximum of 24 trials were available for habituation. The three test trials started seamlessly after the habituation criterion was reached. The test trials were repeated once to ensure that the infants had enough exposure to the clips in order to notice the subtle language switch. All test trial statistics used an average of the 6 test trials for each infant. The control infants (half tested with French, half with English) were tested on new sentences from the same language presented during habituation. Videos of each infant were digitized and coded off-line, frame-by-frame, to obtain precise looking times for the analyses. This frame-by-frame coding allowed for a check of online coding that may have resulted in experimenter bias; no evidence of this was found.

**Reference**

S1 – Example of movie clip used as stimuli. Person silently reciting a passage in French.
S2 – Example of movie clip used as stimuli. Person silently reciting a passage in English.