Language-specific listening

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Languages differ in their phonological structure and psycholinguists have begun to
whether the last of three nonsense items (pronounced by native speakers of Dutch) most resembled the first or the second item. French listeners performed significantly worse than Spanish listeners when the decision was based on stress (bope’lo, bo’pe’lo, bo’pe’lo), but significantly better than Spanish listeners when the decision was based on segmental structure and required that stress variation be ignored (sape’lo, bo’pe’lo, bope’lo; see Fig. 1). French listeners' 'deadness' to stress is not due to unfamiliarity with the acoustic contrast per se, since inter-syllable differences in accent do occur in French. However, in French, such differences never distinguish one word from another; in consequence, listeners may ignore them.

Speakers of Spanish and French show similar sensitivity to the syllabic structure of utterances in various psycholinguistic tasks, but speakers of Japanese are sensitive to another unit: they automatically group phonemes into morae—subsyllabic units consisting of a vowel, a CV or a syllable-final consonant. Importantly, these studies showed that listeners parse foreign language input using their native units. For example, French listeners segment Japanese in
Fig. 2 Discrimination by French newborn babies of lists of di-versus trisyllabic items, and lists of di-versus trimoraic items. Discrimination is attested by a larger increase in sucking rate in the experimental group (change stimuli and syllable/mora number) than in the control group (change stimuli only). This is statistically significant in the case of stimuli differing in number of syllables, but not for stimuli differing in number of morae (the Japanese rhythmic unit, see text).

Fig. 3 Mean sucking rate in a non-nutritive sucking experiment with 32 French newborn babies. Measurements were made during the baseline period (BL), five minutes before, and four minutes after the change in stimulation (CS). The rhythmic group was switched from a mixture of sentences taken from two stress-timed languages (Dutch and English) to a mixture of sentences from two syllable-timed languages (Spanish and Italian), or vice versa. The non-rhythmic group also changed languages, but in each phase of the experiment there were sentences from one stress-timed and one syllable-timed language (e.g. Spanish and English, then Italian and Dutch). Infants from the rhythmic group reacted significantly more to the change in stimulation than infants from the non-rhythmic group.

represent all the features necessary to process any of the world's language (e.g. stress, vowel length, moraic structure, complex syllabic structure, tone and so on).

During the first year, when infants are exposed to their mother tongue, they will stop using features that are not relevant to this language. This has been well-documented for

hypothesis: they have shown that newborn infants tend to neglect the difference between two languages. (Patterson et al., 1975)
boundary between the $d$ and the $s$ in *data*, as in *bad string*). Nine-month-old Dutch babies prefer to listen to lists of Dutch syllables that respect the phonotactics of Dutch (e.g., *bref, murt*) rather than to lists of impossible syllables in Dutch (e.g., *fèfr, rutm*)\(^{12}\). When Dutch and American nine-month-old babies are played lists of Dutch and American words that differ only in their phonotactics, they prefer to listen to the words from their native language (e.g. Dutch but not English allows ‘v’ word-initial clusters such as in *vlammead*, English but not Dutch allows a word-final voiced consonant such as in *bubbub*)\(^{20}\). American nine-month-old babies also prefer to listen to lists of English monosyllables that contain frequent rather than infrequent phonetic patterns\(^{44}\). Most of these findings do not hold true when six-month-old babies are tested, indicating that this learning occurred at some point between six and nine months of age.

**Conclusions**