fricative with the secondary articulation of lip rounding, instead of an alveolopalatal. This paper argues that the failure to use the articulatorily closer Korean alveolopalatal fricative is due to Korean listeners' interpreting English acoustic patterns in terms of the phonetic, especially acoustic, expectations of their native language. That is, Korean listeners attend more to the peak frequency of the English fricative than to the actual tongue position, and map it to their native fricative sound with the spectral peak at the closest frequency. Data collected from female speakers of American English and Korean show that, from fricative midpoint to end, the highest intensity spectral peaks are located at similar frequencies for English palatoalveolar and Korean rounded alveolar fricatives, while those of the Korean alveolopalatal are 1500–2000 Hz higher. This serves as another piece of evidence that second language/loanword adaptation is crucially affected by fine details of L1 and L2 phonetics.

1aSC5. Listening to a non-native speaker: Adaptation and generalization. Constance M. Clarke[a] (Dept. of Psych., Univ. of Arizona, Tucson, AZ 85721)

Non-native speech can cause perceptual difficulty for the native listener, but experience can moderate this difficulty. This study explored the perceptual benefit of a brief (approximately 1 min) exposure to foreign-accented speech using a cross-modal word matching paradigm. Processing speed was tracked by recording reaction times (RTs) to visual probe words following English sentences produced by a Spanish-accented speaker. In experiment 1, RTs decreased significantly over 16 accented utterances and by the end were equal to RTs to a native voice. In experiment 2, adaptation to one Spanish-accented voice improved perceptual efficiency for a new Spanish-accented voice, indicating that abstract properties of accented speech are learned during adaptation. The control group in Experiment 2 also adapted to the accented voice during the test block, suggesting adaptation can occur within two to four sentences. The results emphasize the flexibility of the human speech processing system and the need for a mechanism to explain this adaptation in models of spoken word recognition. [Research supported by an NSF Graduate Research Fellowship and the University of Arizona Cognitive Science Program.] [a]Currently at SUNY at Buffalo, Dept. of Psych., Park Hall, Buffalo, NY 14260, cclarke2@buffalo.edu

1aSC6. Language-specific relevance of formant transitions for fricative. Anita Wagner and Mirjam Ernestus (Max-Planck-Inst. for Psycholinguist., Postbus 310, 6500 Nijmegen, The Netherlands, anita.wagner@mpi.nl)

Although the consonant inventories of Dutch, German, English, and Spanish are similar in size, the fricative inventories differ: English and Spanish distinguish labio-dental versus dental fricatives, whereas Dutch and German do not. Three phoneme-monitoring experiments investigated whether the relevance of formant transitions varies across languages, and whether it depends on the types of fricatives in a language. Native Dutch, German, English, and Spanish listeners detected a target fricative, /s/ or /f/, in nonwords. Half of the nonwords were cross spliced to produce misleading formant transitions: an /s/ replaced an /f/, or vice versa. Dutch and German listeners were unaffected by the misleading formant transitions, whereas Spanish listeners missed significantly more fricatives surrounded by misleading formant transitions; these results were obtained whether stimuli were originally spoken by a Dutch or Spanish speaker. English listeners showed the same sensitivity to formant transitions as the Spanish. Despite previous reports that formant transition cues are of negligible significance for fricative identification (Klaassen-Don, 1983), the present findings show that formant transitions are indeed relevant for listeners whose native language distinguishes labio-dental versus dental fricatives. Listeners relied on the transitions even though no dental fricatives occurred in these stimuli, and independently of the speaker's native language.

1aSC7. Pseudo-homophony in non-native listening. Anne Cutler (Max Planck Inst. for Psycholinguist., P.O. Box 310, 6500 AH Nijmegen, The Netherlands) and Takashi Otake (Dokkyo Univ., Soka, Japan)

Pseudo-homophony may result when non-native listeners cannot distinguish phonemic contrasts. Thus Dutch listeners have difficulty distinguishing the vowels of English *cattle* versus *kettle*, because this contrast is subsumed by a single Dutch vowel category; in consequence, both words may be activated whenever either is heard. A lexical decision study in English explored this phenomenon by testing for repetition priming. The materials contained among 340 items 18 pairs such as *cattle/kettle*, i.e., contrasting only in those vowels, and 18 pairs contrasting only in r/l (e.g., *right/light*). These materials, spoken by a native American English speaker, were presented to fluent non-native speakers of English, 48 Dutch Nijmegen University students, and 48 Japanese Dokkyo University students; the listeners performed lexical decision on each spoken item, and response time was measured. Dutch listeners responded significantly faster to one member of a *cattle/kettle* pair after having heard the other member earlier in the list (compared with having heard a control word), suggesting that both words had been activated whichever had been heard. Japanese listeners, however, showed no such priming for *cattle/kettle* words, but did show repetition priming across r/l pairs such as *right/light*. Non-native listeners' phonemic discrimination difficulties thus generate pseudo-homophony.

1aSC8. Issues in the measurement of perceptual assimilation. James Harnsberger and Ratree Wayland (Univ. of Florida–Gainesville, Gainesville, FL 32611, jharns@ufl.edu)

This study examined the effect of methodological variables on the fit between predicted discrimination scores based on identification data and actual discrimination data in cross-language speech perception experiments. Such variables include (1) single versus multiple talkers in discrimination test trials; (2) different discrimination test types (e.g., AX, AXB, oddity); and (3) identification tests in which stimuli are presented individually versus stimuli being presented in the same context as they appear in discrimination tests. The optimal pair of identification and discrimination tests, yielding the best match between predicted and actual discrimination scores, can be used in subsequent studies examining perceptual category structure. These methodological variables were examined by presenting American English speakers with two Hindi contrasts, [b]–[p] and breathy voiced dental-retroflex, both in initial position and in an [i], [a], or [u] context. The stimuli appeared in a range of categorial discrimination and identification tests. Early results examining the third variable listed above demonstrate that identification tests that present stimuli in the same context as they appear in corresponding discrimination test trials correlate more strongly with discrimination scores ($r=0.72$, $p<0.05$) than identification tests that present stimuli in isolation ($r=0.58$, $p<0.05$).

1aSC9. Effects of speaking rate on the perception of phonemic length contrast in Japanese. Hiroaki Kato (ATR Human Information Sci. Labs., Kyoto 619-0288, Japan, kato@atr.jp) and Keiichi Tajima (Housei Univ., Tokyo 102-8160, Japan)

Segment length is distinctive in Japanese, for example, /kaite/ (buyer) versus /kaite:/ (seabed). Such length contrasts are not necessarily categorical for non-native speakers. To study this property precisely, a series of perception experiments was conducted. A professionally trained native-Japanese speaker produced the nonsense word /erete/ at slow, normal, and fast rates with or without a carrier sentence. Either the second vowel or second consonant of each word was gradually lengthened until reaching its