From sound to sense and back again: The integration of lexical and speech processes.

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The path from sound to sense crosses several disciplinary boundaries. Unfortunately, compelling early demonstrations of categorical perception helped to create a historical wedge between speech and word recognition. This talk highlights some advantages of the re-integration of these fields. First, task-dependencies found in studies of speech perception suggest lexical processes as a more appropriate locus of study. Examination of sensitivity to within-category VOT variation reveals that while such variation is perceived categorically in explicitly metalinguistic tasks, it leads to continuous sensitivity in an implicit measure of lexical activation. Similarly, work on place assimilation shows that the same segment may receive different interpretations in metalinguistic offline tasks and online tasks implicitly reflecting automatic word recognition. To the extent that metalinguistic and lexical tasks produce different interpretations of stimuli, tasks stressing lexical activation are closer to core processing phenomena. Second, we argue that work on word recognition minimizes the importance of phonetic detail at its own peril. A series of studies using paradigms including head-mounted eyetracking techniques show that listeners rely on subphonemic detail to recognize words that have undergone lawful assimilation. Moreover, the same detail facilitates the recognition of neighboring items that drive the assimilation. Thus, subphonemic variability may serve as a processing asset, rather than an obstacle to processing. We suggest a consolidation of research paradigms. Speech processes responding to subsegmental acoustic detail both facilitate word recognition and resolve ambiguity. At the same time lexical dynamics are exquisitely sensitive to such detail and provide a more accurate window on speech processing.