

## ON THE AMERICAN ENGLISH FLAP

Leigh Lisker, University of Pennsylvania, Phila., Pa. and  
Haskins Laboratories, New Haven, Conn., USA

The flap in American English is phonologically ambiguous and phonetically not well specified. In current parlance it is said to represent either an underlying /t/ or a /d/. For those dialects which distinguish latter from ladder it is generally believed that a difference in the duration of the vowel preceding the flap is the distinctive mark. But it is not true that wherever /t/ + [ɾ], /d/ does likewise. There are varieties of American English where, on the one hand, center includes a flap and sender does not, and where, on the other hand, winter is distinct from winner. In the center-sender pair /t/ is produced with a shorter (= laxer?) occlusion than /d/, - a difference quite the reverse of the situation with the other stops, since /p/ and /k/ are usually stopped for longer intervals than are /b/ and /g/. This center-sender difference makes it hard to understand why linguists ever seriously supposed /ptk/ and /bdg/ of American English to be reliably separated on the basis of a fortis-lenis (= longer-shorter) contrast.

The medial consonant of center is described as a nasalized or nasal flap ([ɾ̃] or [ɾ̃̃]); it contrasts with a nasalized stop [ɳ] in the pair winter-winner. An acoustic analysis of tokens of the two words indicates that the medial closure in winner is longer, and that the signal level during the closure tends to be higher than in winter. Tests in which these closure features were systematically varied did not confirm their perceptual importance for the distinction, even though the durational difference appears to be the main difference between flap and stop articulation, and both duration and signal level are acoustically salient features by which the two words may be distinguished by spectrographic inspection. Instead, other tests showed that listeners' responses are more strongly affected by the presence vs. absence of nasalization in the speech signal at and following release of the constriction.