ACOUSTICS2008/2569 Influences of manner and voicing on articulatory coordination in German and French initial consonant clusters

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This study aims for improved understanding of whether and how coordination patterns of supraglottal gestures in complex syllable onsets are driven by competing demands of motor economy for the speaker and high recoverability for the listener. Specifically, EMA data for four German and three French speakers was acquired for C1C2 clusters where manner of articulation was varied for C2 (/l/ vs. /n/) and voicing for C1 (/p/ vs. /b/, /k/ vs. /g/). Results (1): A robust effect of less overlap of the constriction gesture for C1 and C2 when C2 is nasal. Clusters with nasal C2 may require less overlap in order to avoid compromising the acoustic characteristics of the C1 burst by early velar lowering. Interestingly, such clusters appear to be less stable diachronically and may be less favoured for the formation of complex onsets because of reduced scope for efficient parallel transmission of segmental information. Results (2): For German, a consistent effect of less overlap for voiceless compared to voiced C1. Discussion here will centre on whether possible cross-language differences between German and French can be related to differences in timing of voice onset and resulting differences in the acoustic properties of the C1-C2 transitions.