NONLINEAR EFFECTS OF SPEECH RATE ON ARTICULATORY TIMING IN SINGLETONS AND GEMINATES

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HOW DOES ARTICULATORY TIMING IN SINGLETONS AND GEMINATES VARY AS A FUNCTION OF SPEECH RATE?

Method

EMA recordings

Speech rate manipulation:
eliciting continuous variation in rate, by visual analog cue (20-step continuum of rates)

instructions to produce the phrases at the pace that reflected the speed of the moving red box, after it moved off the screen

allows characterization of relations between rate and timing

each speaker performed 32 blocks of 20 trials over two sessions (16 blocks per session), resulting in a total of 320 repetitions of each target word (640 trials)

ARTICULATORY MEASURES

C-R INTERVAL

C-V INTERVAL

CONCLUSION

c-v interval was relatively constant for both singletons and geminates

→ precise, coordinative control

c-r interval (initiation of closure and release) are coordinatively controlled in singletons, but not in geminates

both intervals appear to be constrained in singletons in a way that it is not in geminates

a possible model to account for this is the competitive control model of selection-coordination theory (Tilsen 2016, 2017), in which gestural activation intervals can be controlled via sensory feedback thresholds

TIMING OF CONSTRICTION GESTURES IN SINGLETONS AND GEMINATES CANNOT BE GOVERNED BY A MONOLITHIC CONTROL MECHANISM

TIMING CONTROL MECHANISMS FOR BOTH SINGLETONS AND GEMINATES ARE RATE-DEPENDENT