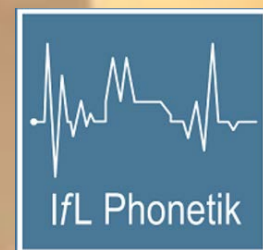


PROBING THE LIMITS OF COORDINATION: WORD ONSET CLUSTERS IN GEORGIAN

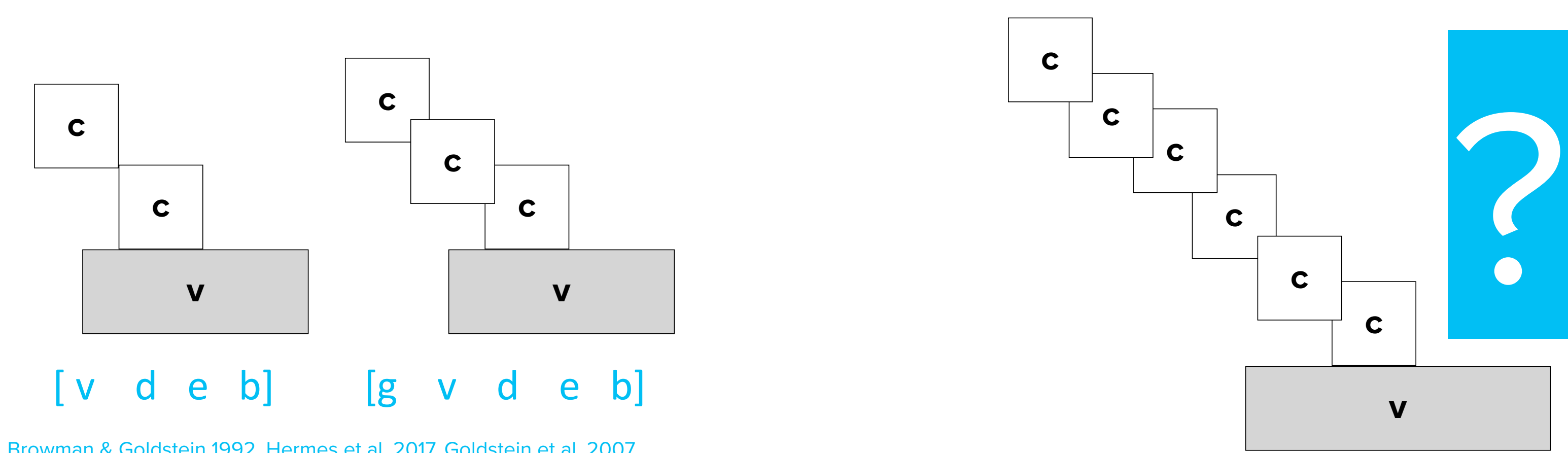
ANNE HERMES, REINHOLD GREISBACH & IOANA CHITORAN



COORDINATION PATTERNS IN (EXTREMELY) LONG CONSONANT CLUSTERS IN WORD INITIAL POSITION IN GEORGIAN

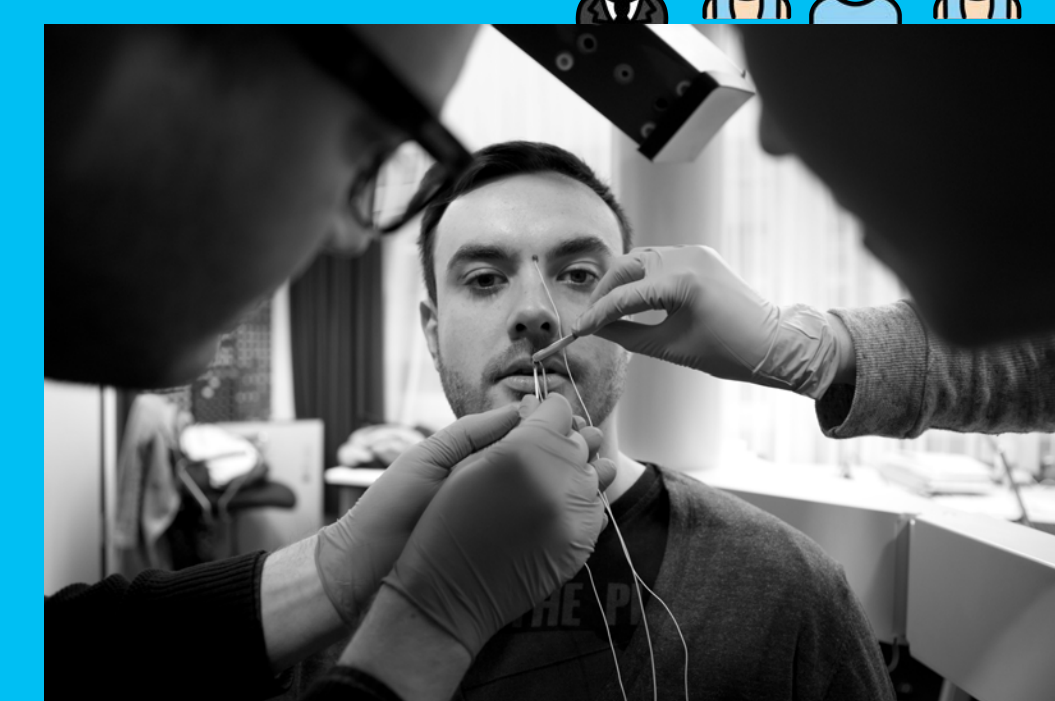
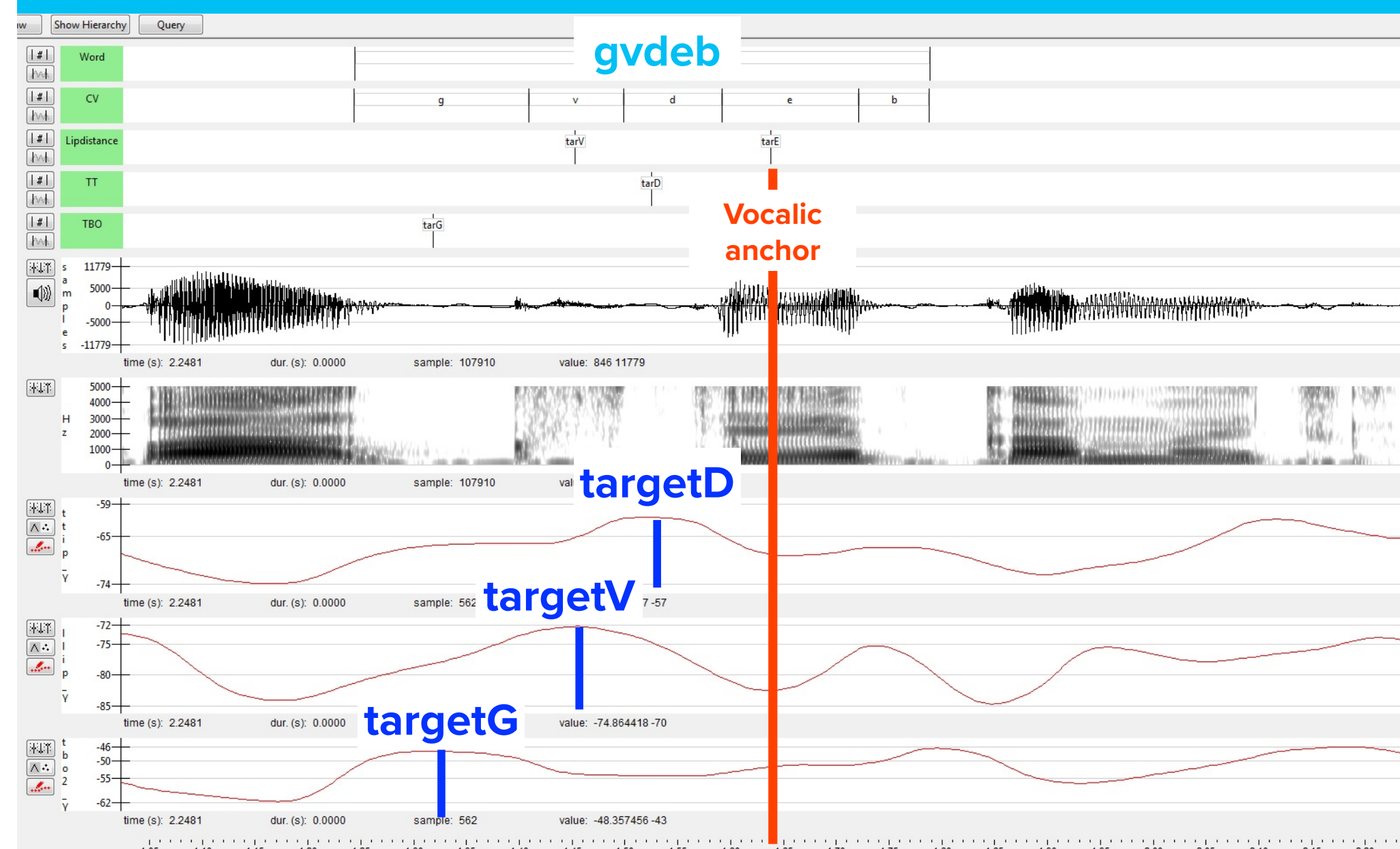
clusters in Georgian expected to show a global c-center coordination, i.e. consonants in a complex onset adjust with respect to the following vowel (implying a rightward and leftward shift)

what happens if up to 6 consonants appear word initially, are they still globally coordinated?



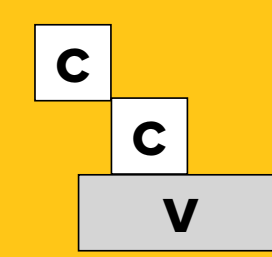
Browman & Goldstein 1992, Hermes et al. 2017, Goldstein et al. 2007

ARTICULATORY RECORDINGS (AG 501)



სიტყვა _____ გამოითქმის ორჯერ
/sit'q'va _____ gamoitkmis ordzer/
'I say the word _____ twice'

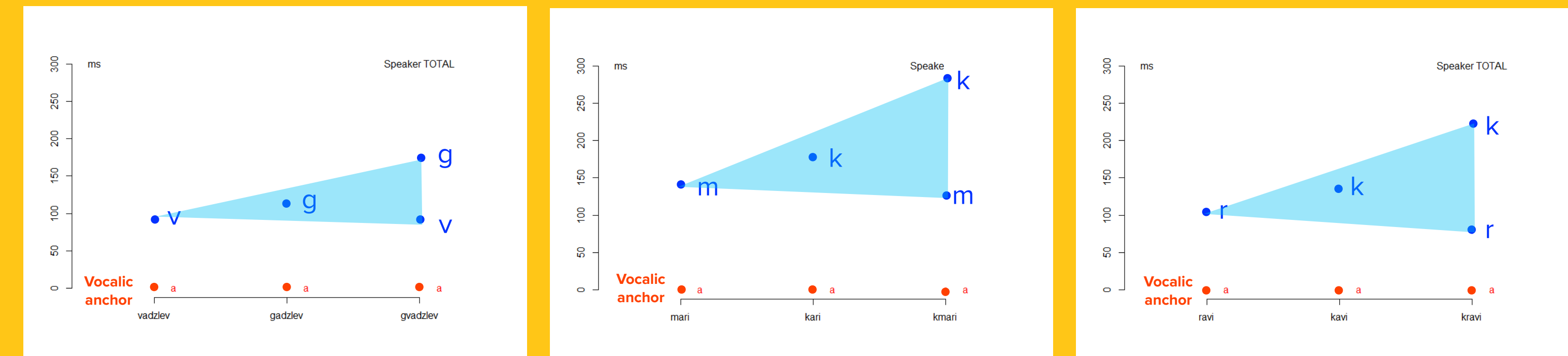
RESULTS: 2-CONSONANT CLUSTERS



/v/-/g/-/gv/

/m/-/k/-/km/

/m/-/k/-/kr/



results presented descriptively across the 4 speakers and 7 repetitions, red dot (zero) represents the target of the vocalic nucleus, i.e. vocalic anchor, blue dots represent the time of the gestural targets initial Cs

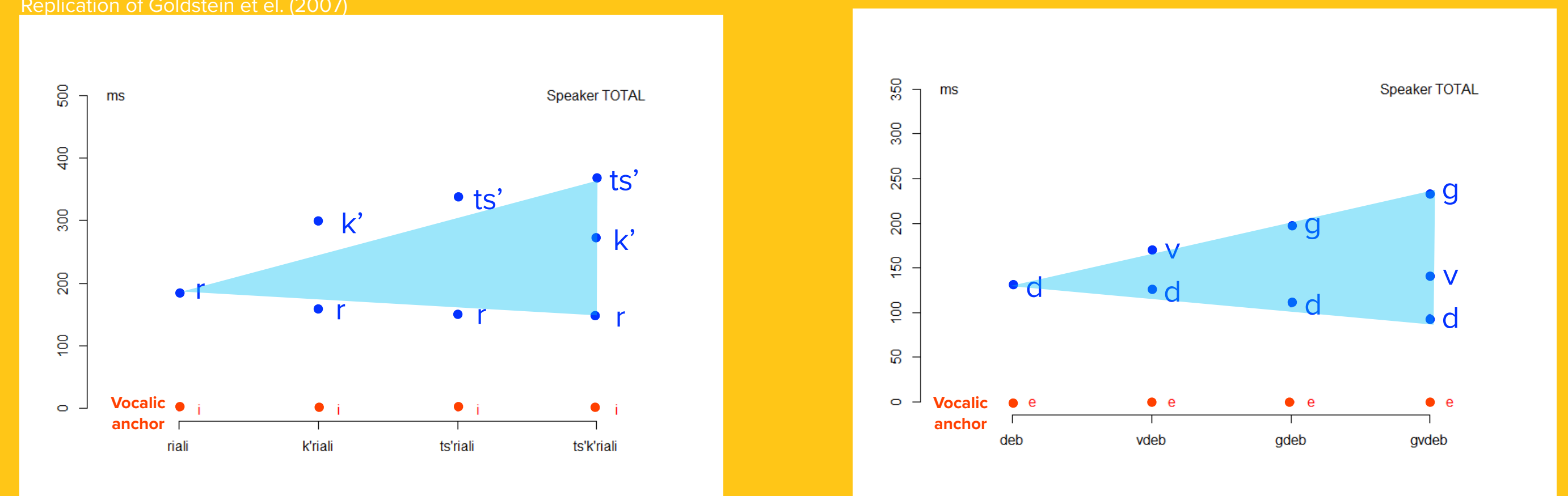
→ 2C clusters (/gv/, /km/, /kr/): rightmost C (/v/, /m/, /r/) shifted towards the vowel, leftmost C (/g/, /k/) shifted away from it (expected C-center coordination)

RESULTS: 3-CONSONANT CLUSTERS

/r/-/k'r/-/ts'r/-/ts'k'r/

Replication of Goldstein et al. (2007)

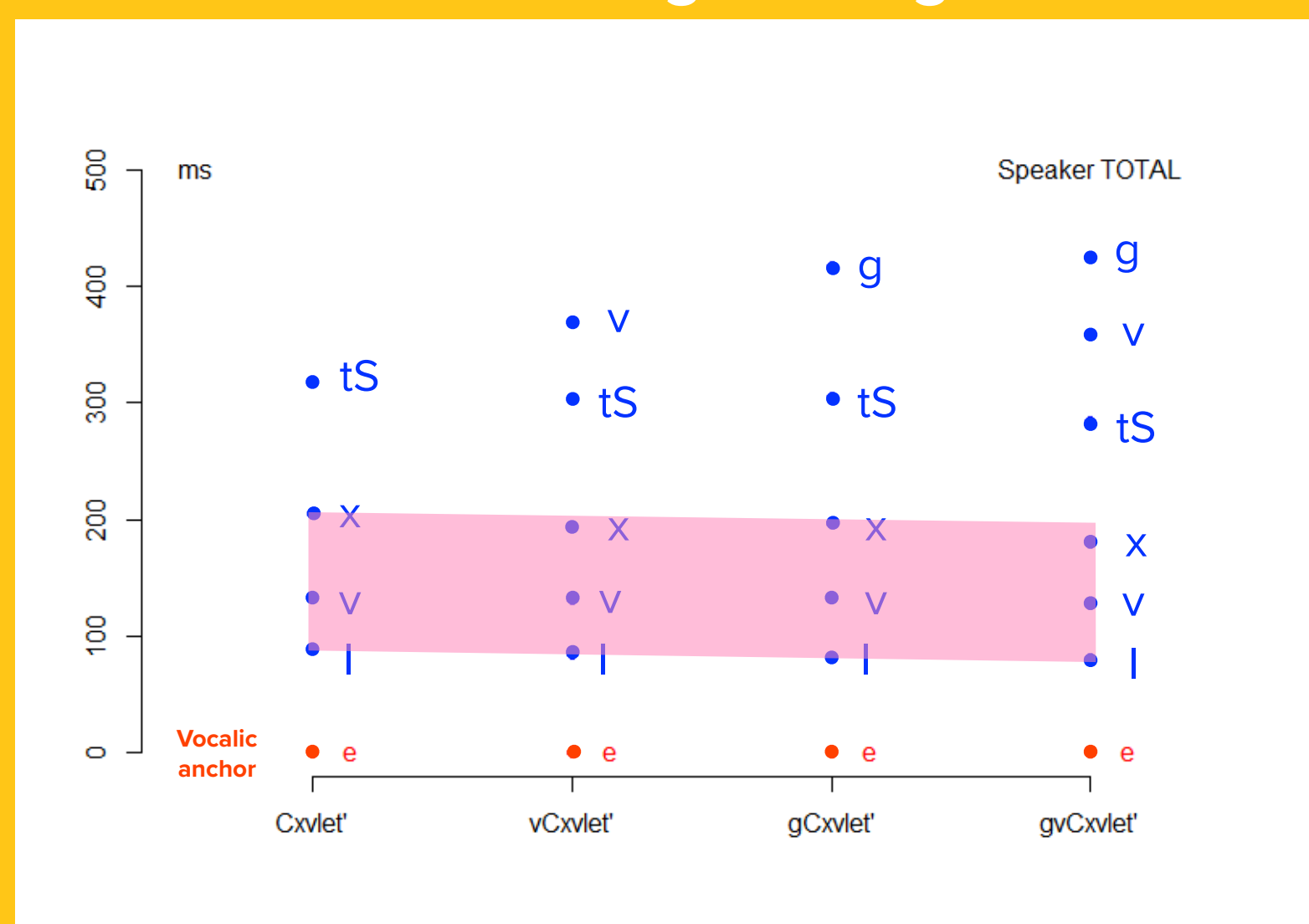
/d/-/vd/-/gd/-/gvd/



→ 3C clusters (/ts'k'r/, /gvd/): rightmost C (/r/, /d/) shifted towards the vowel, leftmost C (/ts', /g/) shifted away from it (global c-center coordination)

RESULTS: 4-, 5-, 6-CONSONANT CLUSTERS

/tSxvl/-/vtSxvl/-/gtSxvl/-/gvtSxvl/



→ beyond 3Cs (4-6) no shift of rightmost Cs towards the vowel (/l/, /v/ and /x/), whereas consonants preceding these adjust towards the left, like /gtS/ and /gvtS/ (no global c-center coordination)

DIFFERENT WAYS OF GLOBAL COORDINATION

word initial Cs in Georgian considered as complex onsets: results confirm that indeed 2-3C clusters reflect a global, prototypical c-center coordination

however, when speech system is dealing with 4-6 Cs, it reaches its physical limits for a global c-center coordination - most importantly, it has to be ensured that all C gestures as well as the V gesture are perceptually recoverable

still globally coordinated → different ways of global coordination

