

Markedness and the Syllable Contact Law in onset sC clusters

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L2 onset cluster production

• Onset CC clusters with a small sonority distance (SD) are more marked than onset clusters with a large sonority distance (Broselow and Finer 1991, Eckman and Iverson 1993).

- [f] >> [kw]
 - Among sC clusters...
 - [st] >> [sn] >> [sl]
 - Cartisle (2006) - L1 Spanish, L2 English
 - Cardoso and Liakin (2009) - L1 Brazilian Portuguese, L2 English
 - [st], [sn] >> [sl], [sw]
 - Yavas & Someillan (2005) - Spanish/English bilingual children
- Previous L2 studies examining onset sC cluster production study speakers of languages which do not allow sC clusters, but allow other onset clusters.

• **Research Question:** Are speakers of L1s that do not allow onset clusters sensitive to sonority distance in the production of CC and sC onsets?

The Current Study

Procedure:

- word list reading
- 83 test words, all CCVC
- tokens of all English sonority distances, e.g. "twin" (SD 7), "fresh" (SD 3), "star" (SD -2)

Participants:

- 8 participants
- native speakers of Mandarin Chinese, Japanese, Cantonese
- all languages that do not have onset clusters
- all enrolled in the English Language Institute, intermediate level

Coding:

- all tokens analyzed in Audacity
- onset clusters coded as "correct", "prothesis", "internal epenthesis", "deletion", "other"

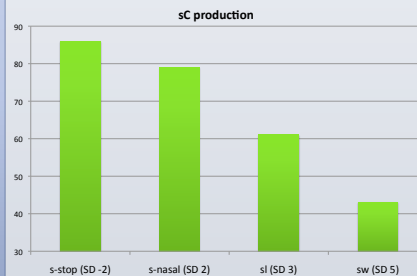
Sonority Distance (SD) measured using the Hogg & McCully (1987) sonority scale

Sound	Sonority Index
Low vowel	10
Mid vowel	9
High vowel	8
Flap	7
Lateral	6
Nasal	5
Voiced fricative	4
Voiceless fricative	3
Voiced stop	2
Voiceless stop	1

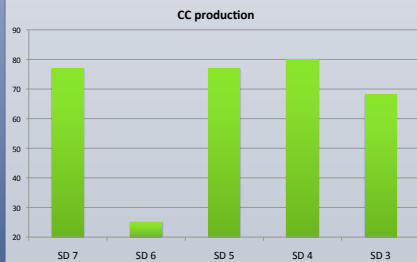
Results

- 70% (466 tokens) of all onset clusters were produced correctly
- Of the non-target like productions:
 - 131 occurrences of internal epenthesis (66% of errors)
 - 2 occurrences of C2 deletion, 0 instances of C1 deletion
 - 0 occurrences of prothesis
 - 51 occurrences of substitution

- **sC cluster results** show that sonority distance is negatively correlated with correct production (Pearson correlation, $r(32) = -.511, p = .003$). This is the opposite pattern from that predicted by markedness in terms of sonority distance.
 - SD prediction: st >> sn >> sl >> sw
 - Results: sw >> sl >> sn >> st



- **CC cluster results** show no correlation between sonority distance and correct production (Pearson correlation, $r(40) = -.176, p = .278$)

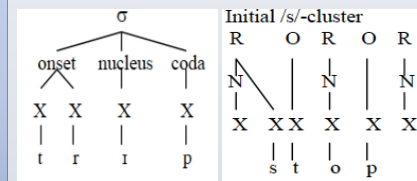


The Syllable Contact Law

The **Syllable Contact Law** states that the greater the sonority drop between coda and following onset, the more harmonic the relationship (Murray & Venneman 1983).

In sC onsets, Barlow (2001) and Goad and Rose (2002) consider /s/ to be outside the onset. Following Kaye (1994) and Pan and Snyder (2004), I consider /s/ to be the coda of the previous syllable. Therefore, sC onset clusters are really coda-onset pairs.

Structure of onset CC clusters Structure of onset sC clusters



Among these participants, the most harmonic relationships are likely to be produced correctly; less harmonic relationships are likely to be modified using internal epenthesis.

- s-t → sonority drop, 86% correct production
- s-w → sonority rise, 43% correct production

Gouskova (2004) proposes a harmonic alignment scale that combines the sonority scale with the Syllable Contact Law's preference for a sonority rise between coda and onset.

- DIST+6 (sw) >> DIST+4 (sl) >> DIST+3 (sn) >> DIST-1 (st)

This scale mirrors the results of onset sC production among these participants.

sC production vs. CC production

Participants do not treat sC and CC onsets the same way.

•sC production

- Gouskova's harmonic alignment scale mirrors the results of onset sC production
- sC onsets are sensitive to the SCL because the /s/ is outside the onset
- These participants do not modify sC onsets using prothesis
 - /s/ does not occur in coda position in Mandarin Chinese or Japanese
- While internal epenthesis moves /s/ from coda (of the previous syllable) to onset (of the previous syllable), it avoids a less harmonic coda-onset relationship in favor of CVCV structure

•CC production

- CC onsets are not sensitive to the SCL because they are true branching onsets
- Among these participants, sonority distance is not a factor in onset CC production
- SD 6 production is much lower than other SDs
 - clusters [gw] and [dw]
 - tokens of SD 6 are rare in English
 - few tokens of SD 6 in the data
 - even without SD 6 tokens, the results are not significant ($r(32) = 0.126, p = .49$)

References

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