No ternary branching in Blackfoot overlong [sss]

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[s] has always been noted for its special clustering abilities (Goad 2011), but in Blackfoot (Algonquian) its distribution is even freer than what we are familiar with from other languages. Goad & Shimada 2014 propose that [s] here can in fact occupy the nucleus (monomoraic or bimoraic), from where it can additionally link to a preceding and/or following onset. In this talk, I argue that the maximal amount of branching permitted for [s] in Blackfoot is binary. When ternary branching would result, shortening occurs. In a Strict CV analysis, I show that the apparent cases of overlong [sss] all contain not only an intervening morpheme boundary, but the [s] melodies are also separated by an empty position.

Data and previous analysis. The Blackfoot inventory contains the consonants [p t k t͡s k͡s s͡t s m n w j ʔ h], the monophthongs [i ii a aa o oo], and the diphthongs [ai ao oi]. Word-internally, the following phonotactic restrictions hold. Complex onsets are disallowed, as are medial onsetless syllables. Rhymes are maximally bipositional, resulting in closed syllable shortening (not shown in the transcription). Codas are restricted to [ʔ h] (which cannot occur in onsets) (1a–b), or the first half of a geminate (1c). [s], as any other place-bearing obstruent, can appear in an onset (2a), or as a geminate (2b). (Examples come from Goad & Shimada 2014, Frantz & Russell 2017 (D), and Frantz 2017 (G)).

(1) a. [moʔt͡síí] ‘hand/arm’ (G13)
b. [áakohpotaawa] ‘it’s going to snow’ (G27)
c. [níNna] ‘my father’ (G15)

(2) a. [póósa] ‘cat’ (G10)
b. [ik͡síssiwa] ‘he is tough’ (G6)

Unlike other consonants, however, [s] and [ss] can also occur in between consonants, and [ss] and [sss] can appear between a consonant and a vowel (3–4). All instances of [s] sound like an obstruent (of different lengths). Goad & Shimada 2014 analyse [s] in these forms as monomoraic (3) vs. bimoraic (4), projecting their own syllable, to ensure proper syllabification of the string. [s] and [ss] thus occupy the nucleus (N) in these cases, in addition to a preceding and/or following onset (O), resulting in [ss] and [sss], as dictated by the medial onset requirement. They propose to rule out (4d) on phonetic grounds.

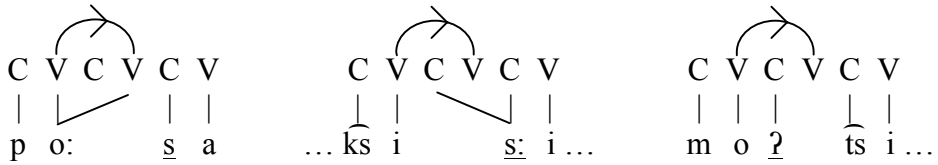
(3) a. [áa.ko.ks.ta.ki.wa] ‘she will read’ (D188) *N*
b. [i.ps.sáá.kit] ‘mend!’ (D95) *N+O*
c. [í.ss.ka] ‘pail’ (G15) *O+N*
d. [ááh.ss.sa.pi.wa] ‘he enjoyed watching’ (D306) *O+N+O*

(4) a. [i.tá.pss.ko.na.ki.wai.k͡si] ‘he shot at them’ (G53)
b. [ii.tái.sa.pss.siis.ts.ta.kioʔ.pi.k͡si] ‘washtubs’ (D36)
c. [ínikátoʔkatsiiwa anníisska ó.sss.ka] ‘he imitated his son-in-law’ (D73)
d. *[...V(ʔ).sss.sV...]

I intend to demonstrate that although short [s] and long [ss] can be found within a single morpheme, overlong [sss] is always fake in the sense used in the term ‘fake geminate’, that is, there is an intervening morpheme boundary inside it. In fact, only the type shown in (4b) occurs regularly. The single example of type (3d) results from compounding of [yaahs] ‘good’ plus [ssapi] ‘look’, whereas the single example of type (4c) is probably a typo, as other entries in the dictionary involving forms meaning ‘son-in-law’ always contain only a long [ss]. Finally, in all cases of overlong [sss] in type (4b), the first [s] in the sequence results from insertion between a morpheme ending in a consonant and another morpheme starting with [ss] by a process called *s-Connection* by Frantz 2017 (illustrated below).

Analysis. I will propose a Strict CV analysis (in terms of Lowenstamm 1996), utilising trochaic (left-to-right) proper government (following Rowicka 1999), which accounts for the whole pattern, including the restrictions on overlong [sss]. The representations of consonantal appearances of [s] in (2a–b) and of coda [ʔ] in (1a) are given in (5a–c), respectively. Long vowels, geminate consonants, and closed syllables involve an empty position, which needs to be properly governed by a preceding non-governed position (indicated by a curved arrow).

(5) a. singleton onset (2a) b. geminate (2b) c. coda (1a)

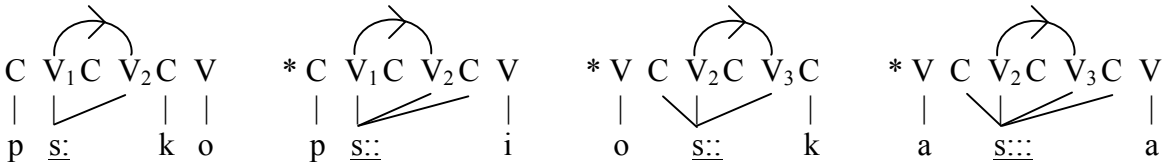


In addition, in Blackfoot, the melody of [s] can also associate to a V position, corresponding to a short vowel (6a) or a long vowel (7a), or the melody can be shared between the V position and the following (6b) or preceding C position (6c), but not both (6d).

(6) a. [...ks.ta...] (3a) b. [...ps.sá...] (3b) c. [í.ss.ka] (3c) d. *[...ss.sa...] (3d)

I propose that the maximal amount of branching permitted for [s] in Blackfoot is binary. In addition to (6d), this also rules out (7b–d).

(7) a. [...pss.ko...] (4a) b. [...pss.si...] (4b) c. *[...ó.sss.k...] (4c) d. *[...a.sss.sa...] (4d)



When there seems to be ternary branching, as in (7b)=(4b), there is in fact a sequence of a non-branching [s] followed by a binary branching [s], separated by a morpheme boundary. The first [s] results from the process of *s-Connection* (Ø → s / C + __ s), illustrated in (8).

(8) a. [ní.tss.si.koo] /nit+ssikoo/ ‘I stopped’ b. [ní.tss.kiʔ.pa] /nit+sskiʔpa/ ‘I broke it’

The inserted [s] associates to the empy V_2 position at the end of the prefix, and an overlong [sss] surfaces in (8a). In contrast, in (8b) shortening occurs. The difference between the two contexts is that in (8b) the [s] melodies are strictly adjacent to each other, whereas in (8a) they are separated by the empty C_3 position. I propose that strictly adjacent [s] melodies form an OCP violation and are merged into a single melody. If the merger creates ternary branching for [s], as in (8b), this is repaired by delinking [s] from the C_3 position, resulting in a long vowel [ss]. In the talk, I will also discuss shortening in another context which on the surface seems identical to (8a), i.e. [CsssV], but where shortening nonetheless occurs because their representations differ.

Conclusion. I have shown that the patterning of [s] in Blackfoot is special because it can associate to both C and V positions. Nevertheless, it is severly restricted by the ban on ternary branching. Overlong instances of [sss] always involve a morpheme boundary, and overlength is only preserved if the [s] melodies are also separated by an empty position. When they are strictly adjacent, shortening occurs. This pattern can be elegantly captured in Strict CV where C and V positions strictly alternate, and some of them necessarily remain empty.

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