

## Aspiration in Blackfoot and Plains Cree

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Aspiration (the phonological feature [spread glottis] or [SG]) appears to play similar if idiosyncratic roles in the sound systems of Blackfoot (BLA) and Plains Cree (CRK), two distantly related languages that are otherwise highly divergent (Goddard 1994, 2018; Berman 2006; Weber 2017).

On the one hand, Windsor (2016) shows that BLA plosives are generally voiceless and unaspirated, except at the ends of phonological phrases, where they tend to be aspirated, e.g. *Matoóskimaa*[<sup>th</sup>] *áwakaasii!* ‘go hunt deer!’ (p. 66). CRK plosives, too, are voiceless and unaspirated, but show variable aspiration word-finally (Hodgson in progress). On the other hand, there is the well-documented case of “word”-final vowel devoicing in BLA (Frantz & Russell 1995; Elfner 2006; Frantz 2009; Gick et al. 2012). Devoicing is rather variable, but Windsor (2017:4–6) shows that it is more regular if the domain of application is understood to be the phonological phrase. Similarly, Wolfart (1996) reports for CRK: “Word boundaries may be marked by a gradual devoicing of a final vowel ...: [niskáh] *niska* ‘goose’” (p. 431), but he warns: “These voiceless glides are not only nondistinctive but also completely optional” (ib.). In turn, Russell & Reinholtz (1997) warn that “the units of Cree which are usually called “words” are in fact phrases at the phonological level” (p. 447).

It is tempting, therefore, to propose a unified explanation for final vowel devoicing and plosive aspiration in BLA and CRK—that aspiration is used to demarcate the right edge of phonological phrase in both BLA and CRK. (See Vaux & Wolfe (2009) for arguments that a phonological feature such as [SG] can adjoin directly to a prosodic constituent, as an “appendix.”) In practice, however, this general proposal is pre-mature because the prosodic hierarchy of CRK in particular remains poorly understood, pace Russell & Reinholtz (1997). Our poster will therefore remain agnostic about the precise domain(s) of final aspiration in CRK. (A study of CRK prosody now underway at the University of Calgary, led by A. Athanasopoulou and D. Flynn, promises to improve our understanding of phrasal phonology in this language.)

Of particular interest is that final aspiration is implemented differently in the phonetics of BLA vs. CRK. Notably, it greatly overlaps with the ends of words in BLA, e.g. *inókawa* ‘they see us’ [inók<sub>ΛΛΛ</sub>] (Windsor 2017:4), so much so that final short vowels are often “soundless” (Gick et al. 2012). By contrast, aspiration mainly affects the latter portion of final vowels in CRK (Wolfart 1996:431). Such a gradient difference in the phonetic implementation of a phonological feature (viz. [SG] at the right edge of prosodic domains) is expected across languages (Kingston 2007).

BLA and CRK show even more divergent phonetics in the case of non-final aspiration, which is phonemic. In both languages, medial aspiration occurs mainly before /p, t, k, ts/, and never before any sonorant consonants. Medial aspiration can also occur before /s/ in BLA, but not in CRK. This restricted distribution has led some analysts to treat /hp, ht, hk, etc./ as preaspirated obstruents (e.g., Reis Silva (2008) for BLA). In reality, aspiration is likely syllable-final in both languages, as it greatly affects the preceding vowel. Medial *Vh* shows increasing voicelessness in CRK, e.g., *ih* [i<sub>h</sub>], *oh* [o<sub>h</sub>], *ah* [a<sub>h</sub>] (Wolfart 1996:430), and this devoicing effect is greater than the one observed in final vowels, such that “vowel length tends to be indeterminate before preaspirated stops” (ib.) in some dialects (Schmirler 2016; Athanasopoulou & Flynn 2018). The same indeterminacy of vowel length is reported for BLA, where medial *Vh* shows increasing phonetic frication: *ih* [i<sub>ç</sub>], *oh* [o<sub>ʍ</sub>], *ah* [a<sub>χ</sub>] (Windsor 2016). This frication is presumably an enhancement effect (Keyser & Stevens 2006; Clements & Ridouane 2006); the utility of such phonetic enhancement is apparent from the fact that short vowels are literally “soundless” when aspirated at the end of a phonological phrase in BLA (Gick et al. 2012).

In short, aspiration appears to have a similar distribution in BLA and CRK phonology, but its phonetic implementation is more dramatic in BLA, both finally and medially.

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