

Syntactic evolution of the state prefix in Na-Dene

The Na-Dene language family comprises the Tlingit language, the Eyak language, and the Dene (Athabaskan) language family.¹ Tlingit and Eyak have a productive verb prefix that indicates states (Krauss 1969; Crippen 2019). States (“neuter verbs”) in Dene languages have no dedicated morphology (Axelrod 1993, Rice 2000), but some show residue of the state prefix (Krauss 1969). Position of the state prefix differs between languages due to changes in verb prefix phonology. But the attested loci reflect constraints imposed by syntax and semantics, excluding positions that would be possible from unconstrained phonological change.

The state prefix in Tlingit and Eyak has two distinct roles: marking inflectional states in certain grammatical aspects and marking lexically specified or derived states. The data in (1)–(4) illustrate this in Tlingit using a state-denoting root \sqrt{hen} ‘claim’ and an activity-denoting root \sqrt{hun} ‘sell’. The **perfective** aspect in (1) and (2) is only grammatical with the state prefix $i- \sim ya-$. The imperfective aspect **with** the state prefix in (3) is grammatical for the state-denoting root, but in (4) it is grammatical for the activity-denoting root **without** the state prefix. State marking is entailed in the perfective aspect (denoting result states) but in the imperfective aspect it is lexically specified.

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| <p>(1) a. \underline{X}at wuduwahein \underline{x}at= wu- du- ya- \sqrt{hen} -$\mu\mu$L 1SG·O=PFV-3IND·S-STV-\sqrt{claim}-VAR ‘Someone claimed me.’</p> <p>b. *\underline{X}at wuduhein \underline{x}at= wu- du- \sqrt{hen} -$\mu\mu$L 1SG·O=PFV-3IND·S- \sqrt{claim}-VAR intended: ‘Someone claimed me.’</p> | <p>(2) a. \underline{X}at wuduwagoon \underline{x}at= wu- du- ya- \sqrt{hun} -$\mu\mu$L 1SG·O=PFV-3IND·S-STV-\sqrt{sell} -VAR ‘Someone sold me.’</p> <p>b. *\underline{X}at wuduhoon \underline{x}at= wu- du- \sqrt{hun} -$\mu\mu$L 1SG·O=PFV-3IND·S- \sqrt{sell} -VAR intended: ‘Someone sold me.’</p> |
| <p>(3) a. \underline{X}at duwahéin. \underline{x}at= du- ya- \sqrt{hen} -$\mu\mu$H 1SG·O=3IND·S-STV-\sqrt{claim}-VAR ‘Someone has me claimed.’</p> <p>b. *\underline{X}at duhéin. \underline{x}at= du- \sqrt{hen} -$\mu\mu$H 1SG·O=3IND·S- \sqrt{claim}-VAR intended: ‘Someone is claiming me.’</p> | <p>(4) a. *\underline{X}at duwahóon. \underline{x}at= du- ya- \sqrt{hun} -$\mu\mu$H 1SG·O=3IND·S-STV-\sqrt{sell} -VAR intended: ‘Someone has me for sale.’</p> <p>b. \underline{X}at duhóon. \underline{x}at= du- \sqrt{hun} -$\mu\mu$H 1SG·O=3IND·S- \sqrt{sell} -VAR ‘Someone is selling me.’</p> |

The sketches in (5) illustrate the distribution of the state prefix in Tlingit, Eyak, and the Dene languages. These use the framework in Crippen 2019, similar to earlier work by Rice (2000) and Hale (2000, 2001a,b); $d-$ is the valency reducing prefix (Voice: passive, antipassive, middle), $s/l-$ or $t-$ is the valency increasing prefix (v : causative, applicative, etc.), and VStem is the verb stem ($\sqrt{\quad}$ and V). The state prefix is a functional head \mathcal{E} (for ‘eventuality’). In Tlingit (5a) the state prefix $i- \sim ya-$ precedes the verb stem (Crippen 2019). In Eyak (5b) the state prefix $i-$ alternates between a position after grammatical aspect and a position before the verb stem (Krauss 1965, 2015). Some Dene languages (5c) show a cognate but now meaningless $y /j/$ in the stem onset (Krauss 1969).

¹ The Na-Dene family tree is binary branching: [Proto-Na-Dene Tlingit [Proto-Dene-Eyak Eyak [Proto-Dene Dene family]]] (Leer 2006, 2010). Haida was originally proposed as a member of the Na-Dene family (Sapir 1915) but it is now known to be an unrelated isolate with extensive Tlingit contact (Levine 1979; Mithun 1999).

- (5) a. [_{AspP} Asp [VoiceP Subj *d*-Voice [_{vP} *s*/*t*-_v [_{EP} *i*-_ε [_{VP} VStem]]]]] *Tlingit*
 b. [_{AspP} Asp [_{EP}? *i*-_ε [VoiceP Subj *d*-Voice [_{vP} *t*-_v [_{EP}? *i*-_ε [_{VP} VStem]]]]]] *Eyak*
 c. [_{AspP} Asp [VoiceP Subj *d*-Voice [_{vP} *t*-_v [_{VP} (*y*)VStem]]]] *some Dene*
 d. [_{AspP} Asp ([_{EP}) *i*- [VoiceP Subj *d*-Voice [_{vP} *t*-_v [_{VP} VStem]]]]] *Proto-ND*

Following Krauss (1969), in Proto-Na-Dene (5d) the state prefix **i*- was either (i) part of grammatical aspect marking in AspP or (ii) in a separate EP complement of AspP. Syllable and foot structure, metathesis, and vowel harmony led to shifts in the linear position of the state prefix. Tlingit and the fossil patterns in Dene languages show interpretation of EP as a complement of vP. Eyak reflects an intermediate stage where EP is ambiguous between a high position near AspP and a low position below vP, depending on how its phonology (metathesis vs. harmony) is analyzed.

Shift of the stative prefix from a high position near AspP to a low position below vP was constrained by syntax and semantics. The stative prefix has a dual role marking grammatical states and lexical states. The high position is consistent with its role in the result states of perfective aspect as well as some other predictable contexts. The low position is consistent with its role in unpredictable (lexical or derived) realization of basic states because the area below vP expresses event structure and the lexicon (Travis 2010; Borer 2013; Wiltschko 2014). Notably, a position between VoiceP and vP is unattested despite being phonologically possible. This implies that the mapping between syntax and semantics can constrain a learner’s analysis of phonological patterns.

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