

## Vocabulary insertion and locality: Verb suppletion in Northern Paiute

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**1. The theoretical issue** In Distributed Morphology (DM), the insertion of vocabulary items is sensitive to features of the surrounding context. Bobaljik (2012) imposes a strict locality constraint on this insertion: a suppletive vocabulary item can only be conditioned by elements within the same maximal projection. In addition to crosslinguistic patterns of suppletion in comparatives, this strict locality constraint has received support from verb suppletion in Uto-Aztecan languages: in particular, Hiaki (Harley et al. 2009, Bobaljik & Harley 2013). Drawing on data from another Uto-Aztecan language, Northern Paiute, I argue that vocabulary insertion cannot be subject to such a strict locality constraint. I show that verb suppletion in Northern Paiute is conditioned by elements outside the verb's maximal projection. Instead, I propose a phase-based constraint, following Embick (2010). It correctly accounts for patterns of verb suppletion in Northern Paiute, and it plausibly follows from independent principles of cyclic spell-out.

**2. Verb suppletion in Northern Paiute** There is a large class of verbs in Northern Paiute that supplete for number. For intransitive verbs, this suppletion is conditioned by the subject (1–2); for transitive verbs, it is conditioned by the object (3). This type of verb suppletion does not pattern like agreement in several respects and is generally independent of a language's agreement system (Durie 1986, Hale et al. 1991).

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|-----|----|--------------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------|
| (1) | a. | Su=naatsi'i <b>ti'</b> atia-hu.<br>NOM=boy <b>play.SG</b> -PFV<br>'The boy played.'        | b. | Iwa-'yu naa'atsi'i <b>tibimua</b> -hu.<br>many-NOM boys <b>play.PL</b> -PFV<br>'Many boys played.'  |
| (2) | a. | Su=nana <b>wi'</b> i-hu.<br>NOM=man <b>fall.SG</b> -PFV<br>'The man fell.'                 | b. | Iwa-'yu naana <b>wiide</b> -hu.<br>many-NOM men <b>fall.PL</b> -PFV<br>'Many men fell.'             |
| (3) | a. | Nii ka=tihidda <b>patsa</b> -hu.<br>I ACC=deer <b>kill.SG</b> -PFV<br>'I killed the deer.' | b. | Nii iwa-ggu tihidda <b>koi</b> -hu.<br>I many-ACC deer <b>kill.PL</b> -PFV<br>'I killed many deer.' |

For the parallel pattern of verb suppletion in Hiaki, Bobaljik & Harley (2013) adopt a version of Bobaljik's (2012) constraint on vocabulary insertion. In its original form, it only allows a suppletive vocabulary item to be conditioned by elements in the same maximal projection (4a); they cannot be in another phrase (4b).

- (4) *Strictly local constraint on vocabulary insertion (Bobaljik 2012:13)*
- |    |                                 |                                                    |
|----|---------------------------------|----------------------------------------------------|
| a. | $\beta \dots [X^0 \dots \alpha$ |                                                    |
| b. | $*\beta \dots [XP \dots \alpha$ | where $\beta$ conditions the insertion of $\alpha$ |

Thus, for transitive verbs, only the direct object triggers suppletion (3a–b), because it is contained within VP. For unaccusative verbs, the subject can trigger suppletion (2a–b), because it originates inside VP.

**3. Suppletion is not conditioned strictly locally** Unergative suppletive verbs would pose a problem for the strictly local constraint. Their subjects originate in Spec-vP, outside the verb's maximal projection (Kratzer 1996). For Hiaki, this problem does not arise. Bobaljik & Harley (2013) argue that all intransitive suppletive verbs are actually unaccusative, since they cannot appear in the applicative (which they assume is incompatible with unaccusatives). In Northern Paiute, however, there are unergative suppletive verbs. The applicative cannot be used as a test for unaccusativity because it is compatible with intransitive suppletive verbs (10b). Instead, the passive can be used: it distinguishes unergatives (5a) from unaccusatives (5b).

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|-----|----|----------------------------------------------------------------------------------|----|------------------------------------------------------------------------------|
| (5) | a. | <b>Na</b> -bida-hu.<br><b>PASS</b> -build.fire-PFV<br>'There was fire building.' | b. | <b>*Na</b> -na'i.<br><b>PASS</b> -burn.IPFV<br>Intended: 'There is burning.' |
|-----|----|----------------------------------------------------------------------------------|----|------------------------------------------------------------------------------|

- (6) a. **Na-di'**ati'a.  
 PASS-play.SG.IPFV  
 'There is playing.'
- b. \***Na-wi'**i-hu.  
 PASS-fall.SG-PFV  
 Intended: 'There was falling.'

Some intransitive suppletive verbs are grammatical in the passive (6a), while others are not (6b). Thus, at least some suppletive verbs in Northern Paiute are unergative verbs, whose subjects originate in Spec-vP, e.g. *ti'atia* ~ *tibimua* 'play' (7a), unlike unaccusatives, e.g. *wi'i* ~ *wiide* 'fall' (7b).

- (7) a. [<sub>VP</sub> [<sub>DP</sub> many-NOM boys] [<sub>VP</sub> **play.PL**]]-PFV = (1b)  
 b. [<sub>VP</sub> [<sub>VP</sub> [<sub>DP</sub> many-NOM men] **fall.PL**]]-PFV = (2b)

**4. A phase-based locality constraint** To account for verb suppletion in Northern Paiute, I adopt a version of Embick's (2010) phase-based constraint on vocabulary insertion. A suppletive vocabulary item can be conditioned by elements in the same spell-out domain (i.e. complement of a phase head) or by elements in the next higher spell-out domain (8a), as long as the lower domain does not contain a phase head (8b).

- (8) *Phase-based constraint on vocabulary insertion* (cf. Embick 2010:53)
- a.  $\delta$  [ ...  $\beta$  ...  $\alpha$  or  $\beta$  ...  $\delta$  [ ...  $\alpha$  ]
- b. \* $\beta$  ...  $\delta$  [ ...  $\alpha$  ...  $\delta$  ] where  $\beta$  conditions the insertion of  $\alpha$ , and  
 where  $\delta$  is a phase head (v, C, or D)

This follows plausibly from principles of cyclic spell-out. Embick suggests (p. 53) that merging a phase head triggers spell-out of its complement *only if it contains another phase head*. If vocabulary insertion happens at spell-out, then when the lower spell-out domain contains a phase head, the suppletive vocabulary item is inserted before any elements in the higher spell-out domain are merged, and thus cannot be conditioned by them. As a result, for transitive verbs, only the internal argument can condition suppletion (9). The VP contains a phase head (D), and so the suppletive verb is inserted before the external argument is merged.

- (9) [<sub>VP</sub> [<sub>DP</sub> I] [<sub>VP</sub> [<sub>DP</sub> many-ACC deer] **kill.PL**]]-PFV = (3b)

The phase-based constraint also allows for the subject of unergative verbs to condition suppletion (7a). Since there is no phase head inside VP, the verb has not yet been inserted when the external argument is merged.

**5. Testing a prediction about applicatives** The phase-based constraint predicts that certain other DPs outside of VP should also be able to condition verb suppletion, such as the applied object in an applicative. In Northern Paiute, there is a high applicative that occurs with transitives (10a) and unergatives (10b), as well as with unaccusatives (data not shown).

- (10) a. Su=nana ka=mogo'ni **iwa-ggu** **tihidda** koi-ggi-ti.  
 NOM=man ACC=woman **many-ACC deer** **kill.PL-APPL-TNS**  
 'The man killed many deer for the woman.'
- b. Su=mogo'ni **iwa-ggu** **naa'atsi'i** **tibimua**-ggi-ti.  
 NOM=woman **many-ACC boys** **play.PL-APPL-TNS**  
 'The woman is playing with many boys.'

With transitive verbs, the original object conditions suppletion (10a). But with unergative verbs, *the applied object conditions suppletion* (10b). With the strictly local constraint on vocabulary insertion, this should not be possible. Assuming that the applied object is introduced in Spec-AppIP, located above VP but below vP (Pylkkänen 2008), it is not contained within the maximal projection of the verb (11).

- (11) [<sub>VP</sub> NOM=woman [<sub>AppIP</sub> [<sub>DP</sub> **many-ACC boys**] [<sub>VP</sub> **play.PL**]]-APPL]]-TNS = (10b)

The phase-based constraint, however, correctly predicts that the DP in Spec-AppIP can condition verb suppletion. The verb is contained within the same spell-out domain as the applied object, and thus has not yet been inserted when it is merged.