

## Verb stem plurality and pluractionality in Navajo

Navajo ((nav), Athabaskan) has a highly complex verbal morphology. The lexicon is primarily verbal; verbs are complete propositions. Plurality is marked at several positions within the verb. We discuss the interaction of the seriative marker, *hi* and allomorphs, and verb stem plurality. These interact to give a ‘one by one’ or ‘group by group’ meaning. Semantic diagnostics support analyzing these two different readings as arising due to implicature. Examples are from Young & Morgan 1987.

**Plural verb stems.** Monosyllabic Navajo verb stems, the rightmost element in the verb, can specify the number of subjects/objects that participate in the verbal event. (1) has a singular verb stem (-*ááh* IPFV, -*yá* PFV ‘to go’) with singular subject agreement. The verb is interpreted as ‘going’ event involving one individual.

- (1) Kin bigháá’-dégé’ ’adaash-ááh                      út’éé’ haaz’ái shił                      k’é’éltó’  
house roof-from down.from.1SG∅IPFV-go.SG.IPFV when ladder with.1SG break.in.two  
‘I was coming down from the roof when the ladder broke with me.’ (YM.d p. 11)

The dual stem, -’*áázh* perfective ‘to go’, is shown in (2)–(3). In (2), the subject agreement is singular, resulting in a comitative interpretation. The speaker is accompanied by someone else: the speaker’s uncle in (2). (3) has dual subject agreement, so there is a dual subject ‘we (two)’.

- (2) Shidá’í tsékooh góyaa bił ’adáá-’áázh  
uncle canyon down.in with.3 down.from.1.SG∅.PFV-go.DU.PFV  
‘I went down into the canyon with my uncle.’ (YM.d p. 11)
- (3) Tséyi’ góyaa ’ada’atiin léi góyaa ’adeiit-’áázh  
Canyon.de.Chelley canyon road.down some canyon down.from.1.DU∅.PFV-go.DU.PFV  
‘We (two) followed a road down into Canyon de Chelley.’ (YM.d p. 12)

In (4), the plural verb stem, -*kai*, appears with dual subject agreement, indicating the subject numbers three or more. Singular agreement with the plural stem gives a comitative interpretation.

- (4) Tséyi’ góyaa ’ada’atiin léi góyaa ’adeii-kai  
Canyon.de.Chelley canyon road.down some canyon down.from.1.DU∅.PFV-go.PL.PFV  
‘We (pl) went down into Canyon de Chelley on a descending trail . . .’ (YM.d p. 12)

These can be analyzed as encoding the number of participants that take part in an event, as captured by the number of agents associated with the walking event for the stems in (5).

- (5) a. -*yá* :  $\text{walk}(e) \wedge |ag(e)| = 1$  (one walking)  
b. -’*áázh* :  $*\text{walk}(e) \wedge |*ag(e)| = 2$  (two walking)  
c. -*kai* :  $*\text{walk}(e) \wedge |*ag(e)| > 2$  (more than two walking)

**Seriative.** The seriative marker, the form *hi* or allomorphs, adds a meaning of sequential events ‘one after another’, as in (6). It bears some similarity to the pluractional (Lasersohn 1995). For plural verb stems like *jaa*’ in (7), an additional reading is possible: ‘one quantity after another’.

- (6) jaa’abaní tsé’áá-dégé’ ch’ídahaas-t’a’  
bat cave-from OUT.HORIZ.PL.SER.3-FLY.PFV  
‘The (3+) bats flew one after another out of the cave.’ (YM.g p. 83)
- (7) naaltsoos ch’éhé-jaa’  
books out.SER.1SG-carry.PL.OBJ.PFV  
‘I carried the books out one book/stack after another.’

Bogal-Allbritten (2010) proposed the analysis in (8) for the Navajo seriative based on Lasersohn’s (1995)’s pluractionality analysis: a pluractional verb is true of a set of sub-events  $E$  such that there are more than two of them that are true of  $P$ , which together add up to the event described by the verb  $V$ . These sub-events cannot overlap in time ( $\tau(e) \circ \tau(e')$ ).

- (8)  $\llbracket hi-V \rrbracket = \forall e, e' \in E [P(e) \wedge \neg \tau(e) \circ \tau(e')] \wedge |(E)| > 2$  (Bogal-Allbritten 2010: (13))

How does the meaning from the verb stem—which can be singular, dual, or plural—interact with the seriative? The meaning ‘we arrived one by one’ can be expressed with a seriative and a singular *yá* (9), dual *’áázh* (10), or plural *kai* (11) stem.

- The propositions expressed by (9) and (11) can convey compatible interpretations, shown by the acceptability of (12a). Non-overlapping sub-events do not need precisely the number of participants described by the verb stem since *-kai* is a PL stem and *-yá* is a SG stem; otherwise, individuals would contradictingly arrive one person *and* one group at a time. Therefore, (9) could entail (11).

(12) Context: My siblings and I went to our mom's house for dinner. Everyone arrived separately, one by one.

- Singular stem *nihiiyá* has sub-events with one participant (13). If plural stem *nihisiikai* just used this pattern (14), (12a) would be unacceptable. If only the sum of the sub-events (given in (15) as *E*) had to have plural participants (12a) would be acceptable and (12b) would be unacceptable.

- In (16), the plural verb stem form (11) is compatible with the negation of the singular form (9). This fits with an implicature analysis, where the implicature can be reinforced (16) or denied (12).

- Conclusion.** Using semantic diagnostics we investigated the relationship between two types of verbal plural marking, the seriative with singular, dual and plural verb stems. Plural/dual verb stems generate an implicature because the singular stems exist as alternative options. The seriative may co-occur with other Navajo plural markings, such as iterative and repetitive, resulting in complex interactions. This paper is a step towards investigating these understudied constructions.

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