

Verb stem plurality and pluractionality in Navajo*

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Abstract: This paper investigates the interaction between the expression of plurality in the Navajo verb stem, which indicates the number of individuals involved in an event, and the seriative marker, which appears in the prefix complex and indicates that a sequence of events takes place. We have found that the seriative can either indicate that the number of individuals described by the verb stem participates in a series of events, a *group by group* reading, or that number indicates the total number of individuals involved with each event, a *one by one* reading. This ambiguity can be formalized using event semantics. This paper contributes to a broader understanding of how expressions of plurality in the Navajo verbal complex can combine together and be interpreted in context.

Keywords: Navajo, pluractional, seriative, event-semantics, plurality

1 Introduction

Navajo or Diné Bizaad (ISO: nav) is a member of the Southern or Apachean branch of the Dene language family spoken on the Navajo Nation in the Southwestern US. Many Navajo also live in urban areas throughout the western United States. A study of Navajo language acquisition on the Navajo Nation found that most fluent speakers are older than 40, with very few monolingual speakers, and almost no Navajo is being learned in homes as a first language (Chee 2017).

Colleges and the University at Crownpoint on the Navajo Nation, and at the University of New Mexico in Albuquerque, have programs on Navajo language and culture to maintain and support community-based documentation efforts. Additionally, an Immersion Nest for urban Navajo in Albuquerque has been instituted, by the Navajo Language Program at the University of New Mexico with Melvatha Chee as Director. This study is part of a research agenda to develop materials for these Indigenous programs.

Navajo has an extensive polysynthetic verbal morphology. The Navajo lexicon is primarily verbal, with dense neighborhoods of inter-dependent and -related words (Sapir and Hoijer 1967; Young and Morgan 1987; Kari 1989; McDonough 1990). Navajo verbs are full propositions. The nouns and verb stems are closed class elements along with inflectional elements and particles. The nouns comprise only a small set of these elements (Young and Morgan 1987: p. viii), and new nouns have the structure of verbs. The minimal verb is two syllables. Verb stems are monosyllabic and inflected for aspect and for classificatory properties, including plurality.

A simple description of the verb word based on Young and Morgan 1987 and McDonough 1990 follows. The Navajo verb is divided into three distinct domains called the Disjunct, Conjunct and Stem (Young and Morgan 1987). There is a boundary (#) between the conjunct and stem domains that is identifiable due to the possibility for speakers to pause at that point in the production of the verb:

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- (1) [Disjunct Conjunct # Stem]_{Wdverb}
 Ch'é -hé -lyeed
 OUT -SER.3 -walk.SG.IPFV
 'They walk out one at a time.'¹

The rightmost element is the monosyllabic verb stem, inflected for mode via suppletion, resulting in stem variants called 'stem sets' (Hardy 1979; Young and Morgan 1987). The suppletion patterns are not well understood. The structure we are assuming is in (2), a minimal verb, with elements from two distinct domains, the conjunct and verb domains, the *ASTEM* marks mode as well as features such as person and number.

- (2) Navajo core (minimal) verb
 [[ASTEM]_{CONJUNCT} [VSTEM]]_{MINIMAL VERB}

Extended verbs contain material to the left of the *ASTEM*, including Disjunct morphs:

- (3) Extended Verb
 [[DISJUNCT] [AGR – ASP – MODE/SUBJ]]_{DISJUNCT/CONJUNCT} [VSTEM]]_{VERB WORD}

Plurality is marked in several positions in the verb with several non-adjacent dependencies: in the disjunct domain, agreement marking (both object and subject) and among the aspectual morphemes, and in the verb stem. Navajo event structure is propositional and complex, and pluractionality and other expressions of event and entity plurality have been studied very little. This study examines how the verb stem (*VSTEM*) plurality interacts with the seriative marker (*SER*) within the *ASPECT* domain of the conjunct.

Section 2 provides background on the verb stem plurality and analyzes the verb stem plurality as describing the number of individuals associated with a particular thematic role in the event. Section 3 demonstrates the use of the seriative marker as denoting a complex verbal event made up of multiple subevents and how it interacts with the meaning of the plural verb stem. In Section 4, we present our ambiguity account of the seriative marker with verb stem plurality. We argue that the verb stem plurality can either describe the complete event denoted by the verb or the subevents introduced by the seriative. Section 5 compares Navajo pluractionality to pluractionality in other languages. Section 6 concludes.

2 Plural verb stems

The rightmost part of the verb is the verb stem, which Young and Morgan (1987) call a 'classificatory verb'. These encode features either for intransitive subjects or transitive objects. The encoded features include physical properties and/or number in addition to manner of action/state.

¹ Much of the Navajo data comes from Young and Morgan 1987 (Y&M.d = dictionary; Y&M.g = grammar); Uncited examples are from our Navajo speaker coauthor, Melvatha Chee. Verbs are split into Disjunct.Conjunct-Stem with only relevant glossing. The glosses are simplifications of the structure.

Glossing conventions: 1: FIRST PERSON, 2: SECOND PERSON, 3: THIRD PERSON, CONN: CONNECTIVE, IPFV: IMPERFECTIVE, ITER: ITERATIVE, OBJ.SG: SINGULAR OBJECT, OBJ.PL: PLURAL OBJECT, PFV: PERFECTIVE, PL: PLURAL, SER: SERIATIVE, SG: SINGULAR, TERM: TERMINATIVE

Here, we focus on the contrasts based on number. For example, *-’aah* is used for single solid, roundish objects and *-tjih* is used for single slender, stiff objects. This contrast is neutralized in the plural: *-níŋ* tends to be used for two objects and *-jááh* for three or more, regardless of physical properties. These verb forms may vary based on the mode, e.g., *-’aah* (imperfective), *-’ááh* (repetitive), *-’q̣* (perfective), etc. for solid, roundish objects.

Table 1 shows forms encoding SG/DU/PL number contrasts for intransitive subjects. Only a very small set of verb stems show this contrast in plurality for intransitive subjects. For example, *-yá* is used to indicate that one person is walking, *-’áázh* is used to mean two people are walking, and *-kai* means three or more people are walking. Verb stems meaning ‘die’, ‘fall’, and ‘flee’ have a one/more-than-one contrast. The \emptyset , *d-*, or *l-* that appears in front of the verb stem is called a ‘classifier’ and often indicates a valence contrast for verb stems. The form of the prefix complex composed of the conjunct and disjunct may vary based on which classifier is present.

	SG	DU	PL
go, walk	\emptyset yá/d-zá	\emptyset ’áázh	(d)kai, l-dee’
lie down, lie	ni- \emptyset t̥	\emptyset téézh	ni- \emptyset jéé’
sit down, sit	\emptyset dá	ni- \emptyset ké	di-ni- \emptyset bin
run	lwod	’ahi-ni-lcháq̣’	\emptyset jee’
die	da- \emptyset tsá		ni- \emptyset ná
fall (animate)	\emptyset t̥hizh, \emptyset go’		ni- \emptyset dee’
flee	ni-cháq̣’		ni-dzood

Table 1: Perfective (PFV), active forms based on Young and Morgan 1987 (grammar): pp. 133-134

2.1 Interaction with agreement

Subject agreement provides support that the verb stem semantically encodes the number of people involved in an event. Subject agreement appears in the conjunct as one of the closest elements to the verb stem. Examples in (4) demonstrate variation in form based on subject agreement. With third person subjects, agreement is often unmarked. First and second person agreement show a contrast between singular and dual number. Plurality is sometimes represented with *da*, as in (5), which is marked separately from subject agreement in the disjunct and can signal a distributive reading. The function of *da* will be left to future work.

- (4) a. *yishcha* - ‘I’m crying’
b. *nicha* - ‘you’re crying’
c. *yicha* - ‘he’s/she’s/it’s/they’re crying’
d. *yiicha* - ‘we’re crying’
e. *wohcha* - ‘you (DPL) are crying’
(Y&M.g: pp. 112–114)

- (5) tsin baqh hadasii-’na’.
tree alongside up.out.DA.1DU.PFV-crawl.PFV
‘We (3+ each) climbed the tree.’
(Y&M.g: p. 62)

Here, we use the singular/dual agreement contrast for first person subjects to show that the verb stems semantically signal the number of individuals involved in the event described by the verb. The verb stems contrasted here are *-yá* (SG), *-’áázh* (DU), and *-kai* (PL) in the perfective mode and describe ‘going’ or ‘walking’ events. The prefix complex appearing with the verb stem is *’ada-* ‘down from a height’ inflected for the perfective (PFV) mode and subject agreement. The form indicating singular subject agreement in the perfective is *’adáá-*, and the dual form is *’adeii-*. For the singular agreement there is variation in the prefix complex based on the classifier/valence marker. The form *’adáá-* appears when there is no classifier (indicated where relevant with \emptyset), and the form *’adaash-* appears with the *d* classifier. The dual form is *’adeii-* for both.

In (6) is a singular verb stem (*-yá* PFV ‘to go’) with singular subject agreement, *’adáá*. The verb is interpreted as a ‘going’ event involving one individual. With dual agreement, *’adeii-*, the singular is unacceptable, as in (7). This is because the dual agreement is not consistent with an event that involves just one individual. As the gloss of the clause-final verb in (6) indicates, both the prefix complex form and the verb stem form reflect the perfective mode. The mode will not be glossed on the prefix complex in most of the examples unless it is relevant.

- (6) Bikooḥ góyaa ndíshchíí’ náá’áá léi’ bikáá’
 creek canyon pinetree it.hangs.down some.or.other upon
’adáá-yá.
 down.from.1SG. \emptyset PFV-go.SG.PFV
 ‘I descended on a pinetree that hangs down into the wash.’ (Y&M.d: p. 577)

- (7) #*’adeii-yá*
 down.from.1DU.PFV-go.SG.PFV
intended: ‘we went down.’

The dual stem, *-’áázh* perfective ‘to go’, is shown in (8)–(9). (8) demonstrates that singular subject agreement is acceptable with the dual stem as long as another individual is included in the event description using *bił* ‘with him/her’. The dictionary entry for the singular agreement form includes *bił* ‘with him/her’, giving a comitative interpretation. For (8), even though the subject agreement is singular, there are a total of two individuals taking part in the event. The speaker is accompanied by someone else: the speaker’s uncle in (8). Example (9) has dual subject agreement, so there is a dual subject ‘we (two)’.

- (8) Shidá’í tsékooh góyaa bił *’adáá-’áázh*
 uncle canyon down.in with.3 down.from.1SG. \emptyset PFV-go.DU.PFV
 ‘I went down into the canyon with my uncle.’ (Y&M.d: p. 11)

- (9) Tséyi’ góyaa *’ada’atiin* léi góyaa *’adeiit-’áázh*
 Canyon.de.Chelley canyon road.down some canyon down.from.1DU.PFV-go.DU.PFV
 ‘We (two) followed a road down into Canyon de Chelley.’ (Y&M.d: p. 12)

Examples (10)–(11) include the plural verb stem, *-kai*. Singular agreement with the plural stem gives a comitative interpretation as in (10) when the postpositional phrase *shádi dóo ba-’áłchíní bił*

‘with my older sister and her family’ is included. Note that the singular prefix complex with *-kai* is *’adaash-* rather than *’adáá-*. This difference in form is due to the *d* classifier that appears with *kai*, as shown in Table 1. If there is not a comitative interpretation, the singular agreement is unacceptable since there is a mismatch between the number of individuals indicated by the subject agreement and the number indicated by the verb. In (11), the plural verb stem, *-kai*, appears with dual subject agreement, indicating the subject numbers three or more.

- (10) Damóo yéédáá’ dziłgháá’déé’ shádí dóó ba-’áłchíní
 Sunday when.past from.the.mountaintop my.older.sister CONN her-family.members
 bił **’adaash-kai**
 with down.from.1SG.dPFV-go.PL.PFV
 ‘Last Sunday, I accompanied my older sister and her family down from the mountaintop.’
 (Y&M.d: p. 11)

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

This is somewhat similar to the contrast between (12a) and (12b), which requires more than one individual takes part in the gathering event.

- (12) a. #I gathered. b. I gathered with my family.

These verb stems can be analyzed as encoding the number of participants that take part in an event, e.g., number of agents of the walking event described by the verb stems in (13).

- (13) a. *-yá* or *-dzá* : $\lambda e.\text{walk}(e) \wedge |ag(e)| = 1$ (one walking)
 b. *-’áázh* : $\lambda e.*\text{walk}(e) \wedge |*ag(e)| = 2$ (two walking)
 c. *-kai* : $\lambda e.*\text{walk}(e) \wedge |*ag(e)| > 2$ (three+ walking)

3 Seriative

The seriative marker, which has the form *hi* or its allomorphs, adds a meaning of sequential events ‘one after another’, as in (14). In (14), the seriative takes the form *ha*.

- (14) jaa’abaní tsé’áá-déé’ ch’ídahaas-t’a’
 bat cave-from out.PL.SER.3-fly.PFV
 ‘The (3+) bats flew one after another out of the cave.’ (Y&M.g: p. 83)

Bogal-Allbritten (2010) proposed the analysis in (15) for the Navajo seriative based on Lasersohn’s (1995)’s analysis of the pluractional. We have not investigated what degree of overlap between subevents is tolerated with the use of the seriative, but the subevents must be perceived as separate.

- (23) Sitsilí dóó shideezhí t'áá 'ákwíjǫ́ 'ólta'-d'éé bus yee
 my.younger.brother and my.sister every.day school-from bus with.it
 nináhá-t'aash
 TERM.back.SER-go.ITER.DU
 'My little brother and sister come home from school every day by bus.'
 (Y&M.d: p. 645)

The verb stem cannot straightforwardly be analyzed as describing the number of individuals involved in seriative subevents, however, because plural verb stems with the seriative can also have a 'one by one' interpretation, as shown in (24). This example can be interpreted as either describing books being moved one by one or stack by stack (plurality by plurality).

- (24) naaltsoos ch'éhé-jaa'
 books out.SER.1SG-handle.PFV.OBJ.PL
 'I carried the books out one book/stack after another.'

Translations using 'one by one' with the plural verb stem often appear with *t'áá 'aǫkéé* 'in a series'. In (25), there are two examples of the seriative with a plural verb stem, the imperfective *ch'ihijeehgo* 'we were running out one after another' and the perfective *ch'ihiejéé* 'we (finished) running out one after another'. As the translation demonstrates, this has a 'one by one' interpretation even though the verb stem is plural.

- (25) 'Ólta'-d'éé t'áá 'aǫkéé ch'ihii-jeeh-go k'adéé 'aǫné'é aah-go
 school-from in.series out.SER.1DU-run.IPFV.PL-CONN nearly be.noon.IPFV-CONN
 'aǫtso ch'ihée-jéé
 all out.SER.1DU-run.PFV.PL
 'We (pl) ran one after the other out of the school and it was nearly noon when we all got out.'
 (Y&M.d: p. 284)

The seriative with plural form is also acceptable in a *one by one* context, as described in (26). The (26a) example has a plural verb stem. Examples (26b) and (26c) include the adverbials *t'áá aǫkéé* 'in a series' and *t'áá sáhi* 'alone', respectively. Finally, (26d) has a singular verb stem *-dzá* along with the adverbial *t'áá sáhi* 'alone'. All of these forms were judged acceptable in the context in (26).

- (26) [Context: My siblings and I went to our mom's house for dinner. Everyone arrived separately, one by one.]
- Shi-má bi-ghandi nihisii-kai
 1SG-mom 3-home TERM.SER.1DU-go.PFV.PL
 'We (3+) arrived at my mother's home one after another.'
 - Shi-má bi-ghandi t'áá aǫkéé nihisii-kai
 1SG-mom 3-home in.a.series TERM.SER.1DU-go.PFV.PL
 'We (3+) arrived at my mother's home sequentially one after another.'
 - Shi-má bi-ghandi t'áá sáhi nihisii-kai
 1SG-mom 3-home alone TERM.SER.1DU-go.PFV.PL
 'We (3+) arrived at my mother's home alone one after another.'

- d. Shi-má bi-ghandi t'áá sáhí nihii-**dzá**
 1SG-mom 3-home alone TERM.SER.1DU-GO.PFV.SG
 'We arrived at my mother's home alone one after another.'

Based on example translations and native speaker judgments the seriative has the following meaning with the SG/DU/PL verb stems:

- SG: one by one; can be same one as in (22)
- DU: two by two; can be same two as in (23)
- PL: one by one or group by group

Therefore, we propose that the seriative with a plural verb stem is ambiguous between a *one by one* and a *group by group* reading. We propose the seriative and verb stem plurality interact to create ambiguity, but there is more to investigate to determine when one reading is more salient. We have done some work to investigate whether one of these interpretations is a cancelable implicature but had inconclusive results. In one set of contexts where only one of the (a) or (b) reading is TRUE, the sentence was acceptable only when the (b) reading was true. In context (26), where the (a) reading is TRUE and the (b) reading is FALSE, the seriative with the plural *kai* was acceptable. While investigation into whether one of these readings is derived through a cancelable implicature was initially promising, the implicature doesn't seem to disappear under negation, and our Navajo speaker coauthor found cancellation tasks to be quite unnatural sounding, necessitating other strategies for investigation.

4 Semantic account

The Navajo seriative is similar to the Kaqchikel pluractional *-la'* (see (27)) or English *X by X* (e.g., *They walked in two by two*) (see Brasoveanu and Henderson 2009).

In the case of the Kaqchikel pluractional, the numeral form in Kaqchikel determines *one by one* or *group by group* (i.e., *plurality by plurality*) reading. With a plain numeral like *oxi'* 'three' in (27) the pluractional form is associated with a *one by one* reading, describing three children total. The reduplicated numeral form as with *ox-ox* in (28) has a *three by three* (*plurality by plurality*) reading. In English, examples like *two by two* are consistent with the *plurality by plurality* reading found with Kaqchikel reduplicated numerals. Overt distributive markers like *each* and *individually* get the *one by one* reading in English but not in conjunction with a construction like *three by three*.

- (27) X-e'-in-q'ete-*la'* oxi' ak'wal-a'.
 CP-A3p-E1s-hug-*la'* three child-PL
 'I hugged three children individually.' (Kaqchikel, Henderson 2014: (96))

- (28) X-e'-in-tij-*la'* ox-ox wäy.
 CP-A3p-E1s-eat-*la'* three-RED tortilla
 'I kept eating the tortillas in groups of three.' (Kaqchikel, Henderson 2014: (105))

The Navajo seriative is distinct in that the plural verb stem can either have a *one by one* or *group by group* meaning. Below are the proposed possible meanings of the seriative with a singular *-dzá* (29), dual *-’áázh* (30), or plural *-kai* (31) stem. In the (a) reading: the verb stem describes the total participants in the event. In the (b) reading: the verb stem describes the number of sub-event participants. The underlined part of the formulas in (29)–(31) corresponds to the contribution of the meaning of the verb stem.

- (29) $\llbracket \text{nihiidzá}_{\text{sg}} \rrbracket =$
 a. $\exists E. \forall e, e' \in E[\neg\tau(e) \circ \tau(e')] \wedge |(E)| > 2 \wedge \text{walk}(E) \wedge |ag(E)| = 1$
 b. $\exists E. \forall e, e' \in E[\text{walk}(e) \wedge |ag(e)| = 1 \wedge \neg\tau(e) \circ \tau(e')] \wedge |(E)| > 2$
- (30) $\llbracket \text{niheet’áázh}_{\text{du}} \rrbracket =$
 a. $\exists E. \forall e, e' \in E[\neg\tau(e) \circ \tau(e')] \wedge |(E)| > 2 \wedge \text{*walk}(E) \wedge \text{*ag}(E) = 2$
 b. $\exists E. \forall e, e' \in E[\text{*walk}(e) \wedge \text{*ag}(e) = 2 \wedge \neg\tau(e) \circ \tau(e')] \wedge |(E)| > 2$
- (31) $\llbracket \text{nihisiikai}_{\text{pl}} \rrbracket =$
 a. $\exists E. \forall e, e' \in E[\neg\tau(e) \circ \tau(e')] \wedge |(E)| > 2 \wedge \text{*walk}(E) \wedge \text{*}\theta(E) > 2$
 b. $\exists E. \forall e, e' \in E[\text{*walk}(e) \wedge \text{*}\theta(e) > 2 \wedge \neg\tau(e) \circ \tau(e')] \wedge |(E)| > 2$

Given that the seriative morpheme indicates three or more subevents are possible, the *one by one* reading for the (a) interpretation of (30) might be ruled out for the dual verb stem unless the same two individuals are involved in multiple subevents.

5 Comparison with Kaqchikel

We can compare the pluractional in Navajo, Kaqchikel, and English by expressing their meaning using Bogal-Allbritten’s (2010) account of the pluractional:

- (32) $\llbracket \text{nihisiikai} (\text{hi-V-PL}) \rrbracket =$
 a. $\exists E. \forall e, e' \in E[\neg\tau(e) \circ \tau(e')] \wedge |(E)| > 2 \wedge \text{*walk}(E) \wedge \text{*}\theta(E) > 2$
 b. $\exists E. \forall e, e' \in E[\text{*walk}(e) \wedge \text{*}\theta(e) > 2 \wedge \neg\tau(e) \circ \tau(e')] \wedge |(E)| > 2$
- (33) $\llbracket \text{V-la' THREE}_{\text{Kaqchikel}} \rrbracket =$
 a. $\exists E. \forall e, e' \in E[\neg\tau(e) \circ \tau(e')] \wedge |(E)| > 2 \wedge \text{*verb}(E) \wedge \text{*}\theta(E) = 3$
 b. –

- (34) $\llbracket \text{three by three}_{\text{English}} \rrbracket =$
 $\llbracket \text{V-la' THREE-RED}_{\text{Kaqchikel}} \rrbracket =$
 a. –
 b. $\exists E. \forall e, e' \in E [\text{*verb}(e) \wedge |\text{*}\theta(e)| = 3 \wedge \neg \tau(e) \circ \tau(e')] \wedge |E| > 2$

For Navajo, the number of individuals associated with the event is, at least in part, denoted by the verb stem. This can either indicate the number of individuals in the complete event described by the verb or the subevents indicated by the pluractional. The Navajo verb stem can show a singular-dual-plural contrast. It remains to be investigated whether numerals can be used to indicate the number of individuals in the subevents.

For Kaqchikel, whether the numeral is associated with the event or subevent individuals is determined by the form of the numeral. Plain numerals describe individuals in the complete event, as in (33), and reduplicated numerals describe the number of individuals in each subevent, as in (34b). The English *X by X* form has numerals that describe individuals in the subevents, as in (34b). For the Kaqchikel pluractional with plain numeral and the English distributive *each*, only a *one by one* reading is available. The translations of the Navajo plural verb stem and seriative as ‘one by one’ indicate that we might need a similar constraint that the subevents in this reading only involve one individual each; however, further investigation is necessary to determine if this constraint is required for Navajo or if the *one by one* interpretation is just one possible reading of (32b). Henderson (2014) accounts for the plain numeral *one by one* and the reduplicated numeral *group by group* interpretation in the Kaqchikel pluractional using Dynamic Plural Logic (DPIL). In (35), the function of the pluractional is to distribute an event into atomic subevents that have an atomic thematic role associated with them:

- (35) Pluractional Distributivity, *-la'*
 $\max^{e', x'} (e' > n \wedge r - \text{part}(e', e) \wedge r - \text{part}(x', x)) \wedge \text{TH}(e', x')$

Henderson’s (2014) account requires atomic subevents and atomic participants, so the dependent indefinite, *oxox THREE-RED*, is interpreted as a *group* of three. This account could be extended to the Navajo case presented here with two changes: (i) The verb stem would not require the individual variable to store an evaluation plurality, unlike the dependent indefinite, since it is possible to have the same individual participate in multiple subevents. (ii) With the seriative/pluractional, the verb stem could be interpreted as a group or a plurality to allow for the two possible readings (*one by one* or *group by group*). An alternative way to formalize the sequential nature of the subevents is to follow Brasoveanu and Henderson’s (2009) account of English *one by one* construction by specifying the linear order of atomic events.

6 Conclusion

Using semantic diagnostics, we have investigated the interaction between two types of verbal plural marking in Navajo: the seriative and the verb stem. An ambiguity approach best accounts for the data presented here. The seriative may co-occur with other Navajo plural markings, such as the iterative and repetitive modes, resulting in complex interactions. For example, this account has not discussed the plural/distributive morpheme, *da*, which can appear with the seriative with a *group by group* reading.

- (36) Shi-má bi-ghandi nidahisii-kai
 1SG-mom 3-home TERM.DA.SER-go.PFV.PL
 ‘We (3+) arrived at my mother’s home one group after another.’

This study is one step towards investigating these understudied constructions. Future work will investigate the interactions between further cases of Navajo plural marking.

References

- Bogal-Allbritten, Elizabeth. 2010. Domains and interaction of plurality in Navajo. Manuscript, University of Massachusetts Amherst.
- Brasoveanu, Adrian, and Robert Henderson. 2009. Varieties of distributivity: *One by one* vs *each*. *Semantics and Linguistic Theory (SALT)* 19:55–72.
- Chee, Melvath R. 2017. A longitudinal cross-sectional study on the acquisition of Navajo verbs in children aged 4 years 7 months through 11 years 2 months. Doctoral Dissertation, The University of New Mexico.
- Hardy, Frank Wilton. 1979. Navajo aspectual verb stem variation. Doctoral Dissertation, The University of New Mexico.
- Henderson, Robert. 2014. Dependent indefinites and their post-suppositions. *Semantics and Pragmatics* 7:1–58.
- Kari, James. 1989. Affix positions and zones in the athapaskan verb complex: Ahtna and navajo. *International Journal of American Linguistics* 55:424–454.
- Laserson, Peter. 1995. *Plurality, conjunction and events*, volume 55 of *Studies in Linguistics and Philosophy*. Berlin: Springer Dordrecht.
- McDonough, Joyce Mary. 1990. Topics in the phonology and morphology of Navajo verbs. Doctoral Dissertation, University of Massachusetts Amherst.
- Sapir, Edward, and Harry Hoijer. 1967. *The phonology and morphology of the Navaho language*, volume 50 of *University of California Publications in Linguistics*. Berkeley: University of California Press.
- Young, Robert W., and William Morgan. 1987. *The Navajo language*. Albuquerque: University of New Mexico Press.