

## Navajo in the typology of Internally-headed Relatives

*Elizabeth Bogal-Allbritten (Univ. of Gothenburg), Keir Moulton (Simon Fraser University)*  
 We consider Navajo internally-headed relative clauses (IHRC) with quantifiers:

- (1) [John Bill chidí **t'áá 'altso** yaa nayiisnii]-éé nizhónigo nidaajeeh.  
 J. B. car all 3O.from 3O.3S.buy.PERF-NMLZ well PL.3S.run  
*Lit:* 'John bought all cars from Bill, they run well.'

We present new fieldwork that compares Navajo with Japanese and Korean quantified IHRCs. We argue first that Navajo resembles Japanese and Korean in its ability to interpret quantifiers RC-internally. However, we also show that Navajo IHRCs are not amenable to analyses given for Japanese/Korean that lack movement out of the RC (Hoshi 1995, Shimoyama 1999) or those which rely on event-based mechanisms (Kim 2007, Grosu & Landman 2012). We show that the Navajo facts fall out from the nature of the language's quantificational structures (Speas and Yazzie 1996), its clausal nominalization strategy, and a compositional mechanism for IHRCs that aligns them with the head-raising analysis of English RCs.

**1. RC-internal quantifiers take RC-internal scope** Grosu (2012) argues that the Navajo internal heads are invariably construed with RC-external scope. His key support is Faltz's (1995) claim that (1) does not mean that John bought all of Bill's cars (or that all of John's cars were from Bill) and they run well, as we might expect if *t'áá 'altso* had RC-internal scope. That is, Grosu reports that (1) has the truth conditions of an EHRC *all of the cars that John bought from Bill run well*. Grosu (2012) cautions that his claims are based solely on the behavior of *t'áá 'altso* and may not extend to other IHRCs in Navajo. This caution is well-placed. We first examine the scope of *'alníí'dóó* 'half,' not considered by Grosu. Sentences were examined in storyboard contexts (summarized below) and we compared pairs of sentences which differed only in the RC-internal vs. external placement of *'alníí'dóó*. Contexts (2a) and (3a) were presented as storyboards: (2a) targets RC-internal scope for 'half' whereas (3a) targets RC-external scope. The judgments below show that *'alníí'dóó* is interpreted where it is pronounced.

- (2) a. Mary spun half of our wool. Alice dyed all of the spun wool red.  
 b. [Mary 'aghaa' **'alníí'dóó** yidiz]-éé Alice yiyiíłchii'.  
 Mary wool half 3O.3S.spin.PERF-NMLZ Alice 3O.3S.dye.PERF  
 c. #[Mary 'aghaa' yidiz]-éé **'alníí'dóó** Alice yiyiíłchii'.  
 (3) a. M. spun all our wool. A. dyed half of the spun wool red. b. #(2b) c. (2c)

In addition, contra Grosu, we argue that universally quantified internal heads do not have precisely the truth conditions of their English EHRC counterparts: whereas the English EHRC *Tom branded all of the horses that Sam roped* is true in (4a), the Navajo IHRC in (4b) is not. (4b) suggests that *t'áá 'altso* also has RC-internal scope. By contrast, overtly RC-external *t'áá 'altso* (4c) was accepted in this context.

- (4) a. Sam roped 4 horses. Tom branded those 4 horses plus 6 others.  
 b. #[Sam kǫ́' **t'áá 'altso** deizloh]-áą Tom yidá'diilid.  
 Sam horse all PL.3O.3S.rope.PERF-NMLZ Tom PL.3O.3S.brand.PERF  
 "Sounds like you're saying Sam roped all of the horses and Tom branded them...It's okay if you don't worry about the plus six others."  
 c. [Sam kǫ́' deizloh]-áą **t'áá 'altso** Tom yidá'diilid.

Grosu (2012) and Faltz's (1995) claim that (1) has the truth conditions of English EHRCs relies crucially on its translation as an English EHRC. When we avoid translations, however,

truth conditional differences emerge between Navajo IHRCs and English EHRCs.

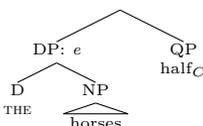
**2: Navajo IHRCs do not rely on events** While Japanese and Korean also give heads RC-internal scope (Hoshi 1995, Shimoyama 1999, Kim 2007), Navajo is incompatible with prior analyses for internal scope. **First**, analyses by Hoshi, Shimoyama, and Kim—who treat IHRCs as closed sentences associated with a main clause E-type pronoun without a movement dependency—cannot account for island effects in Japanese and Korean (Grosu & Landman (G&L) 2012) or Navajo (Platero 1974). **Second**, Navajo resists accounts in which events are used to determine the head. G&L’s (2012) analysis of Japanese and Korean invokes movement to capture island sensitivity but, like Kim (2007), they argue that the head is determined by an operator that applies to the IHRC event and returns an entity—the head—that participates in that event. This allows G&L and Kim to capture the fact that the head can be a wide range of participants related to the IHRC event, or as in (5), the sum of multiple event participants. Navajo, however, lacks this flexibility for heads: the Navajo counterpart to (5) can only mean that Mary caught either the cat or the mouse.

- (5) Jinho-nun [koyangi-ka cwi-lul coch-ko iss-n-un kes]-ul capassta.  
 J.-TOP [cat-NOM mouse-ACC chase-COMP COP-IMPF-REL NMLZ]-ACC caught.  
 ‘A cat was chasing a mouse & J. caught the {cat/mouse/**mouse & cat**}.’

Event relevancy conditions also motivated Kim and G&L’s event-based accounts for Japanese and Korean: IHRCs must describe an event that temporally overlaps with, or is otherwise relevant to, the main clause (Kuroda 1976). This condition is not active in Navajo: difficulty of construing the events as connected degrades Japanese (6a) but Navajo (6b) is felicitous.

- (6) a. # [Kinoo otokonoko-ga ibiki-o kaiteita-no]-ga ashita hanasu.  
 yesterday boy-NOM snore-ACC was.doing-NMLZ-NOM tomorrow speak  
 ‘The boy who was snoring yesterday will speak tomorrow.’  
 b. [Tl’éeđáá’ ’ashkii ’atháá’]-áą yádoółtih.  
 last.night boy 3S.snore.IMPF-NMLZ 3S.speak.FUT  
 ‘The boy who was snoring last night will speak.’ (Platero 1974: (12))

**3: Proposal** Our account allows quantifiers to remain RC-internal but creates a gap not mediated by events. We capitalize on Speas & Yazzie’s (1996) discovery that Navajo quantifiers are distinct phrases that modify DP. QP places a definedness condition on the cardinality of plural individual X: #X gives the number of atomic parts of X (Sauerland et al.2005). QP contains domain variable Y, which the context can set to a larger plurality of horses in C.

- (7)   $[[ \text{'ałní’ dóó} ]_C = \lambda X: \#X = \frac{1}{2}(\#Y_C). X$   
 (7)  $\rightsquigarrow$  the horses whose cardinality equals half a contextually relevant set (e.g. horses) in C

The DP-sans-QP houses null THE, which following work on the Raising/Matching analysis of relatives (Hulsey & Sauerland 2006) provides a variable within the head (9b) over which to predicate abstract (9a) (see Erlewine and Gould 2015). The nominalizer (-éé, -áą, -ígíí) converts the predicate to an individual (9c).

- (8) a.  $[\lambda x. \text{Sam roped } [ [ \text{THE}_x \text{ horses} ] \text{ half} ]]$  b.  $[\text{THE}_x \text{ horse}] \rightsquigarrow \text{THE}(\lambda y. \text{horse}(y) \ \& \ y=x)$   
 c.  $[_{DP} \text{ NMLZ } [ \lambda x. \text{Sam roped } [[\text{THE}_x \text{ horses}] \text{ half} ]]]$  (after Fox 2002)  
 = the max. x s.t. x is horses Sam roped, whose cardinality is half of the horses in  $Y_C$

We relate the proposal to fieldwork results for Navajo quantification strategies more generally.

**Sel. Refs:** Grosu 2012: Towards a more articulated typology of IHRCs, *Lang & Ling Compass*. Grosu & Landman 2012: A quantificational disclosure approach..., *J East Asian Ling*. Kim 2007: Formal linking in IHRs, *NALS*. Platero 1974: The Navajo relative clause, *IJAL*.