

Internally headed relative clauses in Washo: how to escape the indefiniteness restriction

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Intro: Washo, a highly endangered Hokan/isolate language spoken in California and Nevada, forms internally headed relative clauses (IHRCs) through clausal nominalization. While many North American languages disallow definite determiners to co-occur with the internal head (Jelinek’s (1987) *indefiniteness restriction*; Williamson (1987)), Washo violates this restriction. I argue that Washo escapes the indefiniteness restriction with a D head that selects a bindable index, and in doing so provides novel cross-linguistic support for Elbourne’s (2005) proposal of index-hosting definite descriptions. I provide morphological evidence in support of the proposal that definites in Washo house an index, and show that the proposed account of DP structure naturally extends to the related problem of interpreting quantifiers inside the IHRC as well.

Definite heads: (1) gives an example of an IHRC with an indefinite head. In forming an IHRC, the third person pronominal suffix *-ge* turns the subordinate clause into the nominal object of the matrix verb *speak*:¹

- (1) a. [k’áka? dá: gé:gel-i-š-ge] yá:m-a?
heron there 3.sit-IND-SR-REL 3.speak-DEP
She spoke to a heron who was sitting there. Jacobsen (1981)
- b. $\iota x \exists e [\text{sit-there}(e) \ \& \ \text{agent}(x_{\text{heron}})(e)]$

The standard analysis of IHRCs is that an indefinite head is required in order to supply a restricted variable that can be bound by a higher ι -operator, encoded by the nominalizing element (here: *ge*) (Jelinek 1987; Basilico 1996; Toosarvandani 2014). Definites are excluded as they provide no unbound variable to achieve the correct individual interpretation of the relative clause: (1b). Washo however does allow definite determiners – while it lacks any overt definite article, demonstratives may occur with the internal head (2):

- (2) [Ló:t Ryan hádigi mé:hu igi-yi-š-ge] wá? ?-e?-i
yesterday Ryan that boy 3.see-IND-SR-REL here 3-be-IND
That boy that Ryan saw yesterday is here. *field notes*

Proposal: The ability of Washo to violate the indefiniteness restriction is explained once we adopt a treatment of demonstratives according to which they structurally encode a bindable index (e.g., Elbourne 2005, 2008; Schwarz 2009; Hanink To appear). This treatment is schematized below, following Hanink (To appear), for whom *iP* is a functional projection intervening between DP and NP. *i* is interpreted like a variable, but has undergone an IDENT type shift in order to compose with the NP via Predicate Modification (3):

- (3) a.
$$\begin{array}{c} \text{DP} \\ \swarrow \quad \searrow \\ \text{D} \quad \text{iP} \\ \quad \quad \swarrow \quad \searrow \\ \quad \quad \text{i} \quad \text{NP} \end{array}$$
- b. IDENT $[[i]]^g: i \rightarrow \lambda x[x = g(i)]$
- c. For any *i* and assignment *g*, $[[\text{the } i \text{ NP}]]^g = \iota x[[\text{NP}]](x) = 1 \ \& \ x = g(i)$
- d. $[[\text{hádigi mé:hu}]]^g: \iota x[\text{boy}(x) \ \& \ x = g(i)]$

In IHRCs like (2), the index in the denotation of (3d) allows for the definite description to be bound by the ι -binder (*ge*) in lieu of a restricted variable otherwise introduced by an indefinite. The derivation of the relative clause proceeds in four steps (building on Toosarvandani’s (2014) account of Northern Paiute *vP* nominalizations and using Kratzer’s (1996) neo-Davidsonian event semantics). First, the proposition denoted by the subordinate clause after the predicate composes with its arguments is shown in (4a). Second, the event variable is existentially closed (b). Third, this proposition composes with a null *Op* element (a bare λ -operator), which acts as an unselective binder and returns a property by binding the unbound variable

¹Gloss: DEPENDent mood; INDEPENDent mood; SR: switch reference; REDUPLICATION; RELATIVE marker.

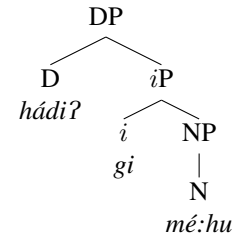
in the denotation of *that boy* (c). Lastly, the nominalizing element *ge*, with the meaning of a Strawsonian definite article, composes with this property, returning a unique individual for whom the property holds (d).

- (4) a. [[Ryan **hádigí mé:hu** igiyiš]]^g
 $\lambda e[\text{see}(\iota z.\text{boy}(z) \ \& \ z = g(i))(e) \ \& \ \text{agent}(\text{Ryan})(e)]$ *Subordinate clause*
- b. [[Ryan **hádigí mé:hu** igiyiš]]^g
 $\exists e[\text{see}(\iota z.\text{boy}(z) \ \& \ z = g(i))(e) \ \& \ \text{agent}(\text{Ryan})(e)]$ *Existential closure*
- c. [[Ryan **hádigí mé:hu** igiyiš]]
 $\lambda x \exists e[\text{see}(\iota z.\text{boy}(z) \ \& \ z = x)(e) \ \& \ \text{agent}(\text{Ryan})(e)]$ *Unselective binding*
- d. [[Ryan **hádigí mé:hu** igiyišge]]
[[ge]]: $\lambda P \iota x [P(x)]$ ([[Ryan **hádigí mé:hu** igiyiš]])
 $\iota x \exists e[\text{see}(\iota z.\text{boy}(z) \ \& \ z = x)(e) \ \& \ \text{agent}(\text{Ryan})(e)]$ *ι -binding*

The relative clause now denotes the individual who is the theme of the seeing event, whose agent is Ryan. In this way, IHRCs with definite heads like (2) may come to act as individual arguments of the matrix verb.

Evidence for *i*: This explanation for the availability of definite heads in Washo does not explain the indefiniteness restriction found in many other languages (Basilico 1996) – if Washo demonstratives may house a bindable index, then D heads in other languages should in principle be able to as well. I propose that it is a point of variation across languages as to whether definite heads host an index; in Washo, there is morphological evidence that an index is indeed present. (5)

The demonstrative *hádigí* is decomposable into a D-element *hádi?*, diachronically a demonstrative, and a 3rd-person pronoun, *gi*. This structure transparently matches the structure in (3a), as shown in (5), where *gi* is the overt realization of a pronominal element.



Quantification: The universal quantifier *mi?le?* in Washo is on a par with *all*, taking a plural restriction. *Mi?le?* too poses a challenge for the indefiniteness restriction but surfaces felicitously in IHRCs, as in (6):

- (6) [Ryan **mi?le-w** me:hú-hu igi-yi-š-ge] lésa? l-ígi-yi
 Ryan all-HUM boy-REDUP 3.see-IND-SR-REL 1.also 1-see-IND
I saw all the boys that Ryan saw. *field notes*

Such examples are accounted for if *mi?le?* selects for a covert index-hosting DP with the same structure in (3a), rather than for the noun directly. Adopting Matthewson’s (2001) denotation for *all* (7), we achieve a meaning for the IHRC in (6) as in (8) after the property-denoting relative clause is ι -bound, which is the individual boy-sum for all of whose atoms there is a seeing event of which that atom is the theme:

- (7) $\lambda x_e \lambda f_{\langle e,t \rangle} . \forall y \leq x [\text{atom}(y) \rightarrow f(y) = 1]$
- (8) $\iota p \forall y \leq \iota x.\text{boy}(x) \ \& \ x = p [\text{atom}(y) \rightarrow \exists e.\text{see}(y)(e) \ \& \ \text{agent}(\text{Ryan})(e)]$

Conclusion: In sum, Washo escapes the indefiniteness restriction in IHRCs with the use of determiners that select for a bindable index, whose presence is evidenced by the transparent structure of demonstratives. The proposal lends cross-linguistic support from an understudied language to Elbourne’s (2005) account of definites, and extends naturally to the otherwise puzzling appearance of quantified heads in IHRCs as well.

Refs.: Basilico, D. 1996. *Head position and internally headed relative clauses*. • Elbourne, P. 2005. *Situations and individuals*. • Elbourne, P. 2008. *Demonstratives as individual concepts*. • Hanink, E. To appear. *The German definite article and the ‘sameness’ of indices*. • Jacobsen, 1981. *Headless relative clauses in Washo*. • Jelinek, E. 1987. *Headless relatives and pronominal arguments*. • Kratzer, A. 1996. *Severing the external argument from its verb*. • Matthewson, L. *Quantification and the nature of cross-linguistic variation*. • Schwarz, F. 2009. *Two types of definites in natural language*. • Toosarvandani, M. 2014. *Two types of deverbal nominalization in Northern Paiute*. • Williamson, Janis. 1987. *An indefiniteness restriction for relative clauses in Lakota*.