

Reference tracking via agreement: Evidence from Washo switch reference

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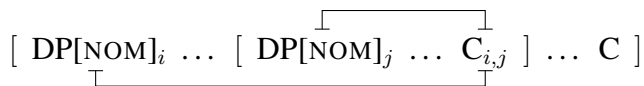
Switch Reference (SR) in Washo (Hokan/isolate) tracks subject reference with a verbal suffix in embedded clauses (Jacobsen 1967): if the subject of the embedded clause is not coreferent with the subject of the immediately higher clause, the suffix is **different subject (DS)** -š (1); otherwise, it's **same subject (SS)** ∅ (2):

- (1) [*émli* t'íšimáŋaw k'-éʔ-i -š-ge] *l-ášašé:s-šemu-yi*
Emily singer.well 3-be-IND -DS-NMNL *I-know-well-IND*
 'I know well that Emily is a good singer.' (Arregi & Hanink 2018)
- (2) *adél* [*daláʔak* ʔ-í:gi-yi -∅-ge] *hámup'ay-é:s-i*
Adele mountain 3-see-IND -SS-NMNL 3.forget-not-IND
 'Adele_i remembers that she_i saw the mountain.' (Arregi & Hanink 2018)

We propose that this type of reference tracking is the result of agreement, as in Arregi & Hanink 2018 and Clem 2018 (see also Baker & Camargo Souza 2018): (i) the SR morpheme is an **Agree** probe in C that targets the referential indices of both subjects, and (ii) the postsyntactic **exponence** of C is dependent on the (non)identity of these indices. Crucially, on the basis of cases of reference overlap, we argue in this talk that other devices commonly employed for reference tracking (e.g., pronominalization, control) do not provide an adequate account of Washo, providing novel evidence that **reference tracking can be encoded by agreement**.

1. Switch reference as C agreement SR in Washo is a strictly embedded finite clause phenomenon, occurring in the clausal complements of factive verbs (1, 2) and in relative and temporal clauses (5–7). SR in Washo is argued to be the realization of C (Finer 1985): it's a peripheral verbal suffix that surfaces after TAM morphemes, flanked only by a nominalizer in some clause types (-ge in (1, 2)). In an Agree-based analysis, C first collects the indices of the subjects via agreement: indices are values of an [ID:_] feature, and C is a Multiple Agree probe (Hiraiwa 2001) that agrees for this feature with both the subject of its own clause and the subject of the immediately higher one (we remain agnostic as to whether this necessitates both upward and downward agreement; see Arregi & Hanink 2018 and Clem 2018 for different options; for evidence that Agree can target referential indices, see Rezac 2004):

(3) Step 1: Multiple Agree



This probe is case-specific (Bhatt 2005, Baker 2008, Bobaljik 2008) and thus only agrees with subjects, which are nominative in Washo. Next, Arregi & Hanink (2018) adopt a key insight from Harbour's (2011) analysis of inverse number-marking in Kiowa: conflicting feature specifications like [ID:*i*, ID:*j*] are syntactically well-formed but lead to the inverse exponence of DS postsyntactically, as the vocabulary entries (4) for C are sensitive to these featural representations. The absence of feature conflict (with SS) leads to zero exponence.

(4) Step 2: Exponence of feature conflict

- a. [_C ID:*i*, ID:*j*] ↔ š (where *i* ≠ *j*) *Different subject*
- b. [_C] ↔ ∅ (elsewhere) *Same subject*

Crucially, the Agree-based analysis captures certain central properties of SR, such as locality effects (i.e., no probing beyond the immediately higher clausal domain):

- (5) [[[*súkuʔ* baŋáya ʔ-é:ʔ-i -š-ge] *daʔmóʔmoʔ* bó:ŋi-yi-š-gi] *p'á:šug-i*]
dog outside 3-be-IND -DS-NMNL *woman* 3.call-IND-DS-NMNL 3.enter-IND
 'The dog who was outside who the woman called came in.' (Arregi & Hanink 2018)

The sentence in (5) has a subject with two stacked internally-headed relative clauses. The subject of the matrix clause is the same as the most deeply embedded RC (*dog*), but SR in this clause is DS, triggered by the different subject (*woman*) in the intermediate RC.

2. Overlapping reference The main take away from this type of analysis is that Agree achieves reference tracking by gathering indices across clauses in order to check for conflict. We offer novel evidence for this claim from overlapping reference in Washo, which bolsters the above arguments for an Agree-based analysis of SR. Cases of overlapping reference in Washo optionally trigger DS or SS on the embedded verb. This can be seen in the fronted temporal adjunct in (6), where the embedded subject *Emily* refers to a subset of the referent of the matrix subject *Adele and Emily*: (DEP: dependent mood)

- (6) [Émli gé:gel-a -{š, Ø}] adél ida émli wagayáy-i
Emily 3.sit-DEP -{DS, SS} Adele and Emily 3.talk-IND
'Adele_i and Emily_j are talking while Emily_j is sitting.' (field notes)

The same is true for the inverse subset relation, as can be seen in (7), where the matrix subject *Emily* refers to a subset of the referent of the embedded subject *Adele and Emily*:

- (7) [adél ida émli wagayáy-a -{š, Ø}] Émli bašá?-i
Adele and Emily 3.talk-DEP -{DS, SS} Emily 3.write-IND
'Emily_i is writing while Adele_j and Emily_i are talking.' (field notes)

Two natural additions can be made to account for this in an Agree-based analysis: (i) plural DPs (including coordinations) have complex [ID] values with more than one index, one for each individual in its referent (Sportiche 1985); and (ii) Agree can copy exactly one of the indices in such a DP. For instance, in (6), copying *i* from *Adele and Emily* results in SS (8a), while copying only *j* yields DS (8b):

- (8) a. [DP_i ... C_{i,i}] DP_{i,j} b. [DP_i ... C_{i,j}] DP_{i,j} c. [DP_i ... C_{i,i,j}] DP_{i,j}
SS DS DS

Parametrization in how these complex index values are copied makes the prediction that **there's no language with SR in which SS is obligatory in cases of overlap**: there are only languages like Washo, which can only copy *one index* from the superset DP, yielding optionality (8a, b), *or* languages that must copy *all indices*, yielding obligatory DS (8c). This prediction is borne out – at least in the languages of North America – as discussed in McKenzie's (2015) survey.

3. Other accounts of reference tracking in SR cannot handle these facts. First, some accounts of switch reference appeal to **binding** (e.g., *Finer 1985, Watanabe 2000*). However, similar cases from the pronominal domain do not allow for both sub/superset relations, which Washo SR does (6, 7). For instance, *Rooryck (2006)* reports that a higher subject may bind a pronoun with overlapping reference iff the *lower* subject constitutes the superset DP:

- (9) a. I_i saved us_{i,j}. b. *We_{i,j} saved me_i.

Second, Washo is also problematic for accounts of SS as an instance of **control** (e.g. *Georgi 2012*), as the embedded subject may be an overt name in overlap contexts (6, 7), which is not the case for control (see also *Clem 2018*). Such examples are also a problem for a mixed agreement-based analysis in which C agrees with an operator in the lower clause that is controlled by a matrix DP (*Baker & Camargo Souza 2018*), as this erroneously predicts that that operator should trigger a Condition C violation with respect to the overt embedded subject in (6, 7).

4. Conclusion At least in the case of SR, reference tracking is the result of agreement: Agree gathers the referential indices of the tracked arguments in the syntax, and the postsyntactic exponence of the probe is sensitive to the resulting (non-)conflicting feature specifications.

References: Arregi & Hanink 2018: In *NELS 48* • Baker 2008: *The syntax of agreement and concord*, OUP • Baker & Camargo Souza 2018: Agree without agreement; Ms., Rutgers • Bobaljik 2008: In *Phi-Theory*, OUP • Clem 2018: In *NELS 49* • Finer 1985: *LI* • Georgi 2012: In *Perspectives on Switch-Reference*. Linguistische Berichte • Harbour 2011: *LI* • Hiraiwa 2001: Multiple Agree and the Defective Intervention Constraint in Japanese; in MIT Working Papers in Linguistics • Jacobsen 1967: In *Studies in Southwestern ethno linguistics*, Mouton • McKenzie 2015: *IJAL* • Rezac 2004: Agree and Merge; Ms., University of the Basque Country • Rooryck 2006: *Lingua* • Sportiche 1985: *LI* • Watanabe 2000: *Syntax*.