Switch reference as index agreement[*]

Karlos Arregi[1] and Emily Hanink[2]

[1]The University of Chicago and [2]The University of Manchester

karlos@uchicago.edu, emily.hanink@manchester.ac.uk

Abstract

The grammatical notion of *switch reference* refers to morphological markers that track whether the subjects of two related clauses are coreferent (Jacobsen 1967). We argue in this paper for a treatment of switch reference as index agreement, based on the behavior of switch reference in Washo (Hokan/isolate; USA). We propose that switch reference marking arises as the result of multiple agreement between C in an embedded clause and the referential index values of the subject in that embedded clause and the subject in its superordinate clause. The morphemes representing both different and same subject marking are then the exponence of the presence or absence, respectively, of conflict in the featural make up of C. We argue that, unlike alternatives based on coordination, control, or binding, an agreement-based account explains several core properties of the phenomenon in Washo, including the distribution and internal structure of clauses marked for switch reference, as well as the exponence of switch reference in cases of reference overlap. More generally, switch reference in Washo provides evidence that Agree can be bidirectional (downward and upward), and for the existence of referential indices as true syntactic objects that participate in syntactic operations.

1 Introduction

The grammatical notion of *switch reference* (SR) refers to morphological marking that tracks whether the subjects of two related clauses are coreferent (Jacobsen 1967; for a recent overview for North American languages see McKenzie 2015). While previous work has argued for the merits of semantic/discursive (Dahlstrom 1982, Stirling 1993, McKenzie 2012) versus syntactic (Finer 1984, 1985, Watanabe 2000, Camacho 2010, Georgi 2012, Keine 2013) treatments of switch reference in different languages, more recent analyses contend that switch reference is in fact a syntactic phenomenon and is more specifically best understood as the reflex of agreement (McKenzie 2012, Arregi & Hanink 2018, Baker & Camargo Souza 2019, Clem 2019).

We contribute to this line of research with switch reference data from Washo (Hokan/isolate; USA), a Native American language spoken around Lake Tahoe.[1] Switch-reference marking in

---

[1]Washo is sometimes considered to be part of the Hokan family; see Campbell (1997) and Mithun (1999) for discussion. The neutral word order of the language is SOV and largely head final. The uncited data in this paper

Washo surfaces as the overt suffix *-š* at the right periphery of a verb when the subject in its own clause is referentially distinct from the one in the clause embedding it (Jacobsen 1964:665, 1967, 1998).[2] This can be seen for example in (1), in which the subjects *daʔmóʔmoʔ* 'woman' and *súkuʔ* 'dog' are referentially distinct, triggering the *-š* morpheme on the embedded verb *éʔ* 'be'. Same-subject marking on the other hand is null, as exemplified in (2), in which the subjects of both clauses are coreferential and *-š* is absent on embedded *í:gi* 'see'.[3]

(1)　*Different subject (DS) -š*

[**súkuʔ**$_j$ baŋáya ʔéʔ-i-**š**-ge 　　　] **daʔmóʔmoʔ**$_i$ bó:ŋi-yi

[**dog**$_j$ 　outside 3.be-IND-**DS**-NM.ACC] **woman**$_i$ 　3/3.call-IND

'The woman$_i$ called the dog$_j$ that was outside.'

(2)　*Same subject (SS) -Ø*

Adele$_i$ [***pro***$_i$ daláʔak 　ʔí:gi-yi-**Ø**-ge 　　　] hámup'a-yé:s-i

Adele$_i$ [***pro***$_i$ mountain 3/3.see-IND-**SS**-NM.ACC] 3/3.forget-NEG-IND

'Adele$_i$ remembers that she$_i$ saw the mountain.'　　　　　　Hanink & Bochnak 2018:67

We propose an analysis of switch reference in Washo according to which the different-subject (*-š*) and same-subject (*-Ø*) markers are realizations of embedded C (building on Finer 1985 and Watanabe 2000). More specifically, we propose that the alternation of these morphemes is conditioned by Multiple Agree (Hiraiwa 2001) and the resulting presence or absence of feature conflict (Harbour 2007) of multiple index feature values on a single head. We argue that embedded C agrees with both the subordinate and superordinate subjects for the value of their referential indices: If the two subjects are distinct and these features do not match, feature conflict arises on C, resulting in the

---

come from fieldwork by Emily Hanink in the Nevada community, largely from trips taking place between 2017-2019. The primary collection methods were elicitation tasks, where the speaker was asked to translate a sentence, as well as grammatically tasks, where the speaker was asked to judge the grammaticality of a given utterance.

[2]Although this description is true when both subjects are singular, matters are more complex when plural nominals are involved. See Section 5.

[3]In all examples, we follow the Leipzig Glossing Rules (https://www.eva.mpg.de/lingua/resources/glossing-rules.php), and use the following abbreviations: ACC(usative), AP(plicative), CAUS(ative), DEP(endent mood), DIST.FUT (distant future), DS (different subject), DU(al), DUR(ative) (see Jacobsen 1964:555), FUT(ure), INCH(oative), IND(dependent mood), INV(erse), NEAR.FUT (near future), NEG(ative), NM (nominalizer), NOM(inative), OBL(ique), PL(ural), PLUP(erfect), PRO(noun), PST (past), Q(uestion particle), R(eduplication) (see Yu 2005), REC.PST (recent past), REFL(exive), SBJ (subject agreement), SG (singular), SS (same subject), UN(expressed object agreement). The numbers 1, 2, and 3 represent first, second, and third person, respectively. In Washo examples, a prefixed number represents intransitive subject agreement in verbs and possessive agreement in nouns. Transitive verbs have a portmanteau prefix indicating the person of the subject and object, represented as 1/2 ('one-on-two'), 3/1 ('three-on-one'), etc. In Bantu examples, NC1, NC2, etc. represent noun classes. Examples from previous literature have been adapted to follow these conventions. We use the standardized orthography for Washo adopted in Jacobsen 1964, which largely follows the IPA chart, with the following special characters: M [m̥], š [ʃ], and y [j]. Stress is represented with an accute accent.

overt exponence of the DS morpheme -*š*. If both subjects bear the same index value, the absence of feature conflict is realized by the null SS morpheme.

Aside from capturing the data, the proposed analysis leads more broadly to two important results. First, it lends further evidence to the idea that indices are syntactic objects (Rezac 2004, Hicks 2009, Kratzer 2009, Kennedy 2014, Grosz 2015, Deal 2017, Hanink 2019), and may accordingly enter the derivation with features that can participate in agreement operations. Second, it lends support to the need for Upward Agree (Baker 2008, Merchant 2011, Bjorkman & Zeijlstra 2019), as there are certain switch reference configurations obtaining in Washo which preclude the availability of downward probing (see also Baker & Camargo Souza 2019; cf. Clem 2019).

The structure of this paper is as follows. In Section 2, we introduce the basic data to be accounted for and present our analysis of switch reference as index agreement. In Section 3, we motivate the need for Upward Agree in our proposal by showing how downward agreement cannot account for the distribution of certain clauses with switch reference marking, while in Section 4 we further motivate upward probing based on the internal structure of these clauses. The data in this section also provide evidence against a coordination-based account In Section 5, we argue based on reference overlap against alternative analyses that attempt to assimilate switch reference to binding or control, and Section 6 concludes.

2 Switch reference as index agreement

In this section we offer an analysis of switch reference in Washo according to which embedded C agrees with the index values of both the superordinate and subordinate subjects via Multiple Agree (Hiraiwa 2000, 2001). The result of this agreement leads to either the realization of the DS or SS marker in the postsyntactic component, which is sensitive to the presence of feature conflict (on a par with 'inverse' morphology in the sense of Harbour 2007, 2011) during vocabulary insertion. This proposal builds on previous syntactic analyses of switch reference put forward for Washo (Finer 1985, Arregi & Hanink 2018) as well as for other languages (Watanabe 2000, Camacho 2010), which also propose that switch reference morphology is hosted on C, though it differs from previous analyses in the proposal that switch reference is purely the result of (bidirectional) agreement. Recent analyses along the same lines for Panoan languages are offered in Baker & Camargo Souza 2019 and Clem 2019.

2.1 Core characteristics of switch reference in Washo

Before moving to the proposal, we begin by outlining the core characteristics of switch reference in Washo. First, switch reference in Washo operates only across a subordinate clause boundary (e.g., (1)-(2) above), and so it does not operate across independent clauses such as those in (3):[4]

(3) [***pro**$_i$* ʔló:t   stór-a   l-éy-eweʔ-áyig-i   ]
     [***pro**$_i$* yesterday store-OBL 1-go-hence-PST-IND]

     [gí:-saʔ   wádiŋguweʔé:beʔ **Ryan**$_j$ ʔ-íy-eweʔ-ášaʔ-i   ]
     [3.PRO-also today   **Ryan**$_j$ 3-go-hence-NEAR.FUT-IND]
     'I went to the store yesterday. Ryan will go today, too.'

Although the subjects of the two clauses are referentially distinct, neither sententence is marked as different subject.

Second, switch reference is subject to locality constraints, as it is clause-bound. This can be shown with sentences with recursive embedding:

(4) [[**súkuʔ**$_i$ baŋáya ʔéʔ-i-š-ge   ] **daʔmóʔmoʔ**$_j$ bóŋi-yi-š-gi   ]$_i$
     [[**dog**$_i$ outside 3.be-IND-**DS**-NM.ACC] **woman**$_j$ 3/3.call-IND-DS-NM.NOM]$_i$
          p'á:šug-i
          3.enter-IND
     'The dog$_i$ who was outside who the woman$_j$ called came in.'

In this example, the lowest and highest subjects are coindexed and refer to the dog,[5] and are referentially distinct from the intermediate subject *daʔmóʔmoʔ* 'woman'. The crucial fact is that switch-reference marking in the lowest clause is for different subject, signaling the difference between the referents of the subject of that clause and the subject of the immediately dominating one. The fact that the highest subject is coindexed with the lowest subject is irrelevant for switch-reference marking in the lowest clause.

Third, switch reference tracks subjects only. In the following example, the indirect object (matrix pro) is coreferent with the subject in the subordinate clause (embedded pro), and they are referentially distinct from the matrix subject *t'é:liwhu* 'man':

---

[4]Truly independent clauses in Washo are rare in connected speech. Generally, the dependent mood maker *-aʔ* is used in order to form connected clauses in a narrative, see Bochnak & Hanink 2019.

[5]Specifically, the matrix subject is an internally headed relative clause whose internal head is *súkuʔ*. On relative clauses in Washo, see Hanink 2019.

(5)   [***pro**_j* bašá:ʔ té:bɨl-a   l-í:gi-yi-š-ge   ] **t'é:liwhu**_i ***pro**_j* l-éšɨl-i

       [***pro**_j* book   table-OBL 1/3-see-IND-**DS**-NM.ACC] **man**_i   ***pro**_j* 3/1-give-IND

       'The man$_i$ gave me$_j$ the book that I$_j$ saw on the table.'

If switch reference were sensitive to non-subject arguments, we would expect an intervention effect here as a result of the coreference between the embedded subject and matrix indirect object, triggering same-subject marking in the embedded clause, contrary to fact. The DS marker is obligatory, indicating that only subjects participate in reference tracking.

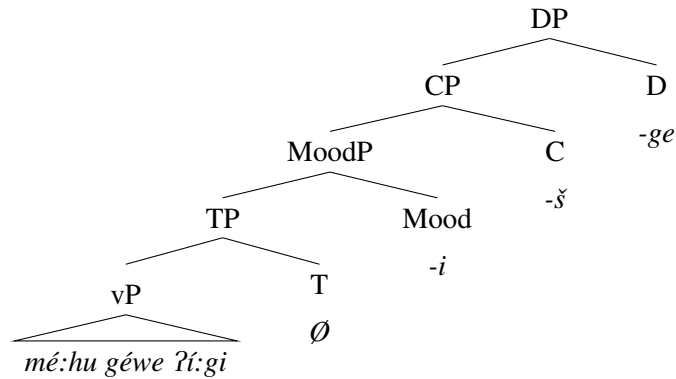## 2.2   The structure of embedded clauses in Washo

We now turn to the assumptions we make about the structure of embedded clauses in Washo, which are further justified in Section 4.1. We adopt the proposal that the different subject marker *-š* is a realization of embedded C (see also Finer 1985, Watanabe 2000), which is consistent with the morpheme ordering inside embedded clauses: The DS marker appears at the right periphery of embedded clauses, outside of almost all other morphology (excluding only the clausal nominalizer *-gi/-ge*).

    A number of embedded clauses in Washo come in the form of clausal nominalizations, illustrated in (1), (2), (4), and (5) above. In what follows, we assume the following structure for such clauses, which has four key characteristics. First, D is a nominalization layer that inflects for case (*-gi* for nominative; *-ge* for accusative).[6] Second, C is the locus of switch reference (there are no other complementizers in the language). Third, the head Mood has two possible realizations: the default *-i* in matrix clauses and nominalizations, or *-aʔ* in temporal clauses and other adjuncts. Finally, T may host tense inflection (see Bochnak 2016 on Washo as a language with optional tense). All of these components are reflected in the structure in (7) for the embedded clause in (6).

(6)   [mé:hu géwe   ʔí:gi-yi-š-ge   ] lé:-saʔ   l-í:gi-yi

       [boy   coyote 3/3.see-IND-DS-NM.ACC] 1.PRO-also 1/3-see-IND

       'I also saw the coyote that the boy saw.'   Hanink 2016:122

---

[6]Hanink (2019) argues that this morpheme is in fact the spell out of an index head 'idx', rather than D as such. We abstract away from that here in the interest of expositional simplicity.

(7) *The structure of clausal nominalizations in Washo*

```
                              DP
                           /      \
                         CP         D
                        /   \       -ge
                    MoodP     C
                   /    \     -š
                 TP      Mood
                /  \     -i
              vP    T
             /  \   Ø
    mé:hu géwe ʔí:gi
```

The internal structure of other clausal types that display switch reference, e.g., adjuncts and sentential subjects, is examined in Section 4.1.

2.3 Proposal

With the behaviors of switch reference as well as our structural assumptions laid out, we now turn to an analysis of switch reference as index agreement. The core of the proposal is that embedded C agrees with both the matrix subject as well as the subject of the clause it's contained in as well as the subject in the superordinate clause. The SS and DS markers are then the realization of this embedded C, whose spellout may be sensitive to multiple features. Crucially, what's being agreed for is the value of the referential *index* values on these subjects, which drives the referential tracking effect of switch reference. In what follows, we call this index feature [ID], whose value is a natural number; for more on the proposal that index values may enter the derivation as features that participate in agreement, see i.a. Rezac 2004, Hicks 2009, Kratzer 2009, Kennedy 2014, Grosz 2015, Deal 2017 and Hanink 2019. Our proposal of index agreement has both a syntactic and postsyntactic component, which we discuss in turn.

2.3.1 Syntax

Returning to the core properties of switch reference in Washo, we show how an analysis invoking index agreement captures these essential characteristics. The first characteristic is that switch reference operates only across subordinate clause boundaries. We argue that this generalization falls out from the fact that switch reference is the result of Agree (in the sense of Chomsky 2000, 2001). In particular, we propose that embedded C undergoes Multiple Agree (Hiraiwa 2001; see also Zeijlstra 2004, Merchant 2006; Nevins 2007, 2011; Deal 2015). While the direction of probing

for Hiraiwa (2001) is consistently *downward*, we propose below that probing can occur *upward* as well in a bidirectional fashion.
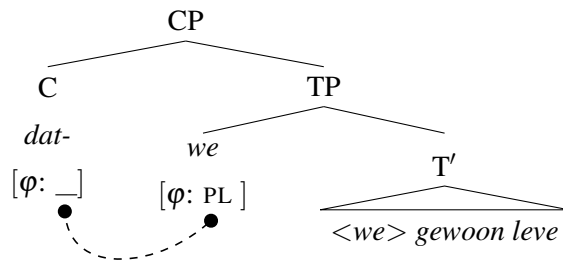
In our system, agreement for the [ID] feature on the *embedded* subject is an instance of Downward Agree on a par with the type of complementizer agreement that is well known from e.g., certain varieties of West Germanic. This type of complementizer agreement is exemplified through Katwijk Dutch in (8), in which the complementizer covaries with the number specification on the embedded subject.

(8)   *Complementizer agreement for φ-features in Katwijk Dutch*

    a.   … **dat** ik zuinig   leef.
            that I   economical live.SG
            '… that I live economically.'   van Koppen 2005:32

    b.   … **datt-e**   we gewoon lev-e.
            that-PL we normal live-PL
            '… that we live normally.'   van Koppen 2005:32

This agreement is represented schematically in (9), in which C probes downward for the valued φ-features on the embedded subject:
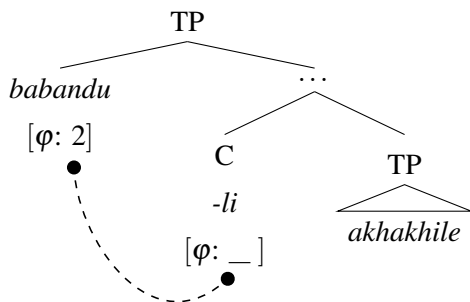
(9)   *Downward complementizer agreement*

On the other hand, we argue that agreement for the [ID] feature on the *superordinate* subject is an instance of Upward Agree (i.a. Adger 2003, Zeijlstra 2004, Baker 2008, Bjorkman 2011, Merchant 2011, Wurmbrand 2012, Bjorkman & Zeijlstra 2019), on a par with complementizer agreement in certain Bantu languages (cf. Diercks 2013, Carstens 2016). In the examples below from Lubukusu, the complementizer agrees with the noun class of the superordinate subject, rather than with the embedded subject:

(10)   *Complementizer agreement for φ-features in Lubukusu*

a.   **Baba**-ndu   ba-bol-el-a   Alfredi   [**ba-li**   a-kha-khil-e   ]
       NC2-people NC2.SBJ-said-AP-FV NC1.Alfred [NC2-that NC1.SBJ-FUT-conquer]
       'The people told Alfred that he will win.'   Diercks 2013:358

b.   Alfredi   ka-bol-el-a   baba-ndu   [**a-li**   ba-kha-khil-e   ]
       NC1.Alfred NC1.SBJ-said-AP-FV NC2-people [**NC1-that** NC1.SBJ-FUT-conquer]
       'Alfed told the people that they will win.'   Diercks 2013:358

Agreement of this kind can be captured by upward probing by C for the φ features on the matrix subject as in (11), in which the former probes upward for the valued φ-features on the latter:

(11)   *Upward complementizer agreement*

Given the existence of both types of agreement patterns, we propose that switch reference can be conceptualized as Multiple Agree implementing both types of complementizer agreement in a single derivation: Embedded C probes *downward* for the [ID] feature on the embedded subject, and then *upward* for the same feature on the superordinate subject. To this effect, we adopt the following conditions for Agree (cf. Bidirectional Agree in Merchant 2006:2):

(12)   *Conditions for Agree*
         X enters an Agree relation with *Y* iff:

a.   *X* bears a feature *F* with value *V* and *Y* bears a matching unvalued inflectional feature F', and

b.   *X* c-commands *Y* *or Y* c-commands *X*.

Rather than build in possibly multiple iterations of agreement into the definition of Agree itself (i.a. Hiraiwa 2001), we assume that probes are specified for whether or not they may search multiple times, that is, this behavior is a probe-specific parameter. In particular, following a suggestion in Harbour 2011:568, we adopt the idea that, for such probes, each iteration of probing for a particular

feature produces an additional unvalued inflectional feature F', with the desired effect that multiple values of the same feature may be copied back onto the probe even after the initial F' is satisfied. Rather than place an undesirable limitation on the number of times that C may probe, we further adopt the assumption that agreement may fail in the sense of Preminger 2014: C will continue to probe for suitable goals until the next C boundary is merged (see the discussion around (13) below).

We also note here that Upward Agree is not necessarily the only possible agreement operation to capture all instances of the relation between embedded C and the superordinate subject in Washo, an important issue that we return to in detail in the next section in the discussion of adjuncts. Crucially however, we show that invoking Upward Agree is the only way to capture that relation in certain clause types (e.g. clausal nominalizations) and positions (e.g. complements) in Washo.

Returning to restrictions on Agree, we now turn to the second characteristic of switch reference that must be captured: locality constraints. As shown in examples such as (4), repeated below, switch reference may not track subjects in a clause separated by an additional CP boundary:

(13) [[**súkuʔ**$_i$ baŋáya ʔéʔ-i-š-ge   ] **daʔmóʔmoʔ**$_j$ bóŋi-yi-š-gi   ]$_i$
     [[**dog**$_i$ outside 3.be-IND-**DS**-NM.ACC] **woman**$_j$ 3/3.call-IND-DS-NM.NOM]$_i$
     p'á:šug-i
     3.enter-IND
     'The dog$_i$ who was outside who the woman$_j$ called came in.'

This follows from our analysis in that index agreement is subject to the same locality constraints as found in other types of agreement by C (and other heads), resulting in clause-boundedness. When probing in either direction (downward or upward), C can't probe past an additional clause boundary, that is, the edge of the embedded CP phase may access both the subordinate and superordinate subjects, but may not cross another CP phase-boundary.

Finally, the third characteristic of switch reference is that it is sensitive to the index values of subjects only, and ignores all other arguments. To account for this behavior, we propose that the C probe is a *selective* one (Bhatt 2005, Baker 2008, Bobaljik 2008), probing only for nominative DPs. Washo has an accusative case system, evidence for which is visible in pronouns (and the aforementioned clausal nominalizers, which are identical to pronouns, as shown in (13)):

(14) a. **gí:**   pélew   ʔíʔiw-i
        3.PRO.NOM jackrabbit 3/3.eat-IND
        'He's eating the jackrabbit.'   Jacobsen 1979:151

9

b. **gé:** pélew ʔíʔiw-i
   3.PRO.ACC jackrabbit 3/3.eat-IND
   'He's eating it, the jackrabbit.' Jacobsen 1979:151

The nominative pronoun is *gí*, as in (14a), and the accusative is *gé:*, shown in (14b).

To summarize, the syntactic component of switch reference involves multiple probing by C for the [ID] feature on accessible, nominative DPs. Downward probing by C for this feature on the subordinate subject is on par with downward complementizer agreement in West Germanic, while upward probing for [ID] on the superordinate subject has a parallel in upward complementizer agreement in Bantu. The locality behaviors observed in switch reference fall out from the fact that embedded C can't probe past another C boundary in either direction.

2.3.2 Postsyntax

We have proposed that, in the syntax, embedded C probes for the values of the [ID] features on two nominative DPs – the subject of the clause its contained in, as well as the subject of the superordinate clause. This results in the copying of two [ID] features onto C, which are ultimately responsible for the difference in exponence between the SS and DS markers. The following vocabulary entries offer a previous of our morphological analysis:

(15)   *Vocabulary entries for C*

   a. $[_C \text{ ID}:i, \text{ ID}:j\,] \to \check{s}$ (where $i \neq j$)   DS
   b. $[_C\;] \to \emptyset$ SS

In a nutshell, our proposal is that the DS marker in Washo is overtly realized as *-š* (in contrast to the null SS marker) because it is the realization of *feature conflict*. That is, this suffix is inserted in the morphology when the two index values copied onto C differ from one another, and the null suffix is the elsewhere realization of C.

The notion of feature conflict here builds on Harbour's (2007, 2011) analysis of inverse marking in Kiowa. Harbour argues that many Kiowa nouns have lexically specified number (the language has singular, dual, and plural numbers). Inverse suffixal morphology appears on the noun when these *lexically*-specified features are in conflict with *semantically*-specified features. If no conflict arises, number is unmarked. The following table illustrates three noun classes (out of a total of nine):

(16) *Number-dependent noun marking in Kiowa (Harbour 2011:564)*

| Noun	Singular	Dual	Plural	
'fish'	ɔ́ɔpį́į́	ɔ́ɔpį́į́	ɔ́ɔpį́į́-**dɔ́**	*Inherently nonplural*
'tomato'	k!ɔ̂ɔ̨-**dɔ**	k!ɔ̂n	k!ɔ̂ɔ̨-**dɔ**	*Inherently dual*
'stick'	áá-**dɔ**	áá	áá	*Inherently nonsingular*

Inverse-marked nominals further trigger inverse-specific verbal agreement. Take *áá* 'stick' for example, which is inherently nonsingular:

(17) a. Áá-**dɔ**   **e**-dɔ́ɔ́.
          stick-**INV** 3**INV**-be
          'It's a stick.'   Harbour 2011:564

      b. Áá   **ę**-dɔ́ɔ́.
          stick 3**DU**-be
          'It's two sticks.'   Harbour 2011:564

      c. Áá   **gya**-dɔ́ɔ́.
          stick 3**PL**-be
          'It's some sticks.'   Harbour 2011:564

In (17a), inverse morphology appears on the verb in addition to the noun, which is semantically singular. No inverse morphology appears on the verb in the dual (17b) or the plural (17c) however, as no conflict arises between the lexical and semantic number specifications.

According to Harbour, Kiowa nominals contain two functional layers: a DP immediately dominating NumP, which in turn dominates a projection containing the noun (represented below as NP). The noun is lexically specified for its inherent number, and semantic number is in Num. Nominal inflection is the realization of D, which undergoes Multiple Agree for the number features in the noun and Num. The verb then agrees with D:

(18) *Multiple Agree with NP (inherent number) and Num (semantic number) in Kiowa*

$[_{DP} [_{NumP} \text{NP Num}]_{NumP} \text{D}]_{DP} \dots \text{Agr}$
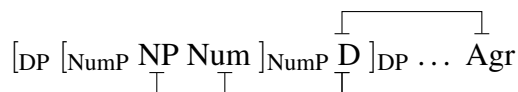
Number features are copied from both NP and Num, which can result in feature conflict:[7]

---

[7]For ease of exposition, the representations below are simplified, in that we only include the number feature [±singular]. Harbour's analysis also includes [±augmented] and [±group], which allows him to account for Kiowa's three-number system and its nine number-based noun classes.

(19)   *Multiple Agree when NP is inherently nonsingular*

    a.   *No conflict in dual/plural*

NP	Num	*Agree* $\rightarrow$	D, verbal agreement
[−singular]	[−singular]		[−singular, −singular] = [−singular]

    b.   *Conflict in singular*

NP	Num	*Agree* $\rightarrow$	D, verbal agreement
[−singular]	[+singular]		[−singular, +singular]

For this particular noun class, the number feature has the same specification in NP and Num when the latter is nonsingular. As a result of Multiple Agree, no feature conflict arises in D (and indirectly, in verbal agreement): The negative value for the feature is copied twice, resulting in [−singular, −singular] (because feature complexes are assumed to be sets, this is equivalent to [−singular]). However, when Num is singular, Multiple Agree results in a conflicting feature specification, namely, [−singular, +singular]. In other noun classes, the conflicting specification arises with other features, that is, [−augmented, +augmented] and [−group, +group], or a combination of these. All of them trigger identical inverse morphology.

Harbour argues that this feature conflict is syntactically well-formed, but is exploited by the morphology to result in inverse morphology, given vocabulary entries of the following form, in which INV stands for various exponents in D and verbal agreement:

(20)   *Vocabulary entries in the inverse (adapted from Harbour 2011:569)*
    $[-F, +F] \rightarrow$ INV (for any feature F)

An important aspect of this vocabulary entry is that it's not specific to any particular number feature, hence the use of the variable F. When no such feature conflict is present, D is null, and verbal agreement is realized by noninverse singular, dual, or plural exponents.

The crucial idea behind Habour's proposal is that feature conflict is in principle permissible in the syntax, but is represented by the morphology at vocabulary insertion. In order to implement this idea, the use of variables in vocabulary entries becomes necessary.[8] We adopt this idea in our proposed vocabulary entries for switch-reference morphology.

Returning to Washo, we build on Harbour and propose that the different-subject suffix in Washo is also the realization of feature conflict of index values on C. With disjoint subjects, [ID] in C has two values: $[_C$ ID:i, ID:j $]$. Both feature values are copied during agreement, which is syntactically

---

[8]Although Harbour's vocabulary entry for Kiowa uses variables only for the feature atribute, he also makes use of them for feature values in the analysis of inverse number morphology in Jemez (Harbour 2011:576–578)

well-formed, as in inverse number marking in Kiowa. With coreferent subjects, [ID] in C has one value: $[_C$ ID:i, ID:$i] = [_C$ ID:i]. This featural difference determines the exponence of C at Vocabulary Insertion:

(21)   *Vocabulary entries for C (repeated from (15))*

    a. $[_C$ ID:i, ID:j] → š   (where $i \neq j$)   DS

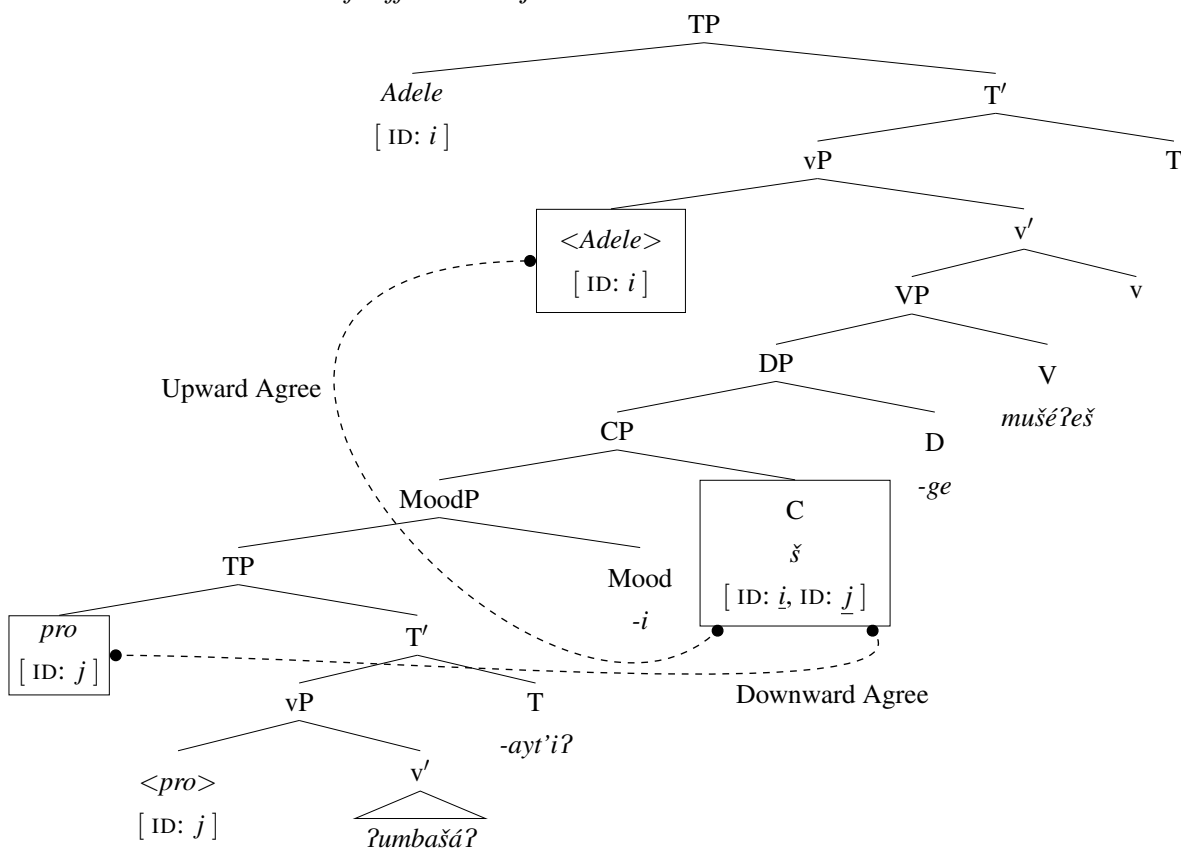   b. $[_C$] → Ø   SS

Adopting the feature conflict approach captures the zero exponence of the SS marker, and the apparent inverse morphology of the DS marker. Note the similarity here to Harbour's analysis of Kiowa: We model DS in Washo in terms of feature conflict that is exponed by virtue of making reference to variables in the vocabulary entries themselves, which are sensitive to conflicting feature values.

2.3.3   Putting the pieces together

The following gives the derivation for an example of feature conflict with disjoint subjects, given the analysis developed above:

(22)   a.   **Adele**$_i$ [***pro*** $_j$ ʔum-bašáʔ-ayt'iʔ-i-š-ge   ] mušéʔeš-i
             Adele$_i$ [***pro*** $_j$ 2/3-write-PLUP-IND-DS-NM.ACC] 3/3.read-IND
             'Adele$_i$'s reading what you$_j$ wrote.'

b. *The derivation of different subject*

TP
- *Adele* [ID: i]
- T′
  - vP
    - <*Adele*> [ID: i]
    - v′
      - VP
        - DP
          - CP
            - MoodP
              - TP
                - *pro* [ID: j]
                - T′
                  - vP
                    - <*pro*> [ID: j]
                    - v′
                      - *ʔumbašá?*
                  - T
                    - *-ayt'iʔ*
              - Mood
                - *-i*
            - C
              - *š*
              - [ID: $\underline{i}$, ID: $\underline{j}$]
          - D
            - *-ge*
        - V
          - *mušéʔeš*
      - v
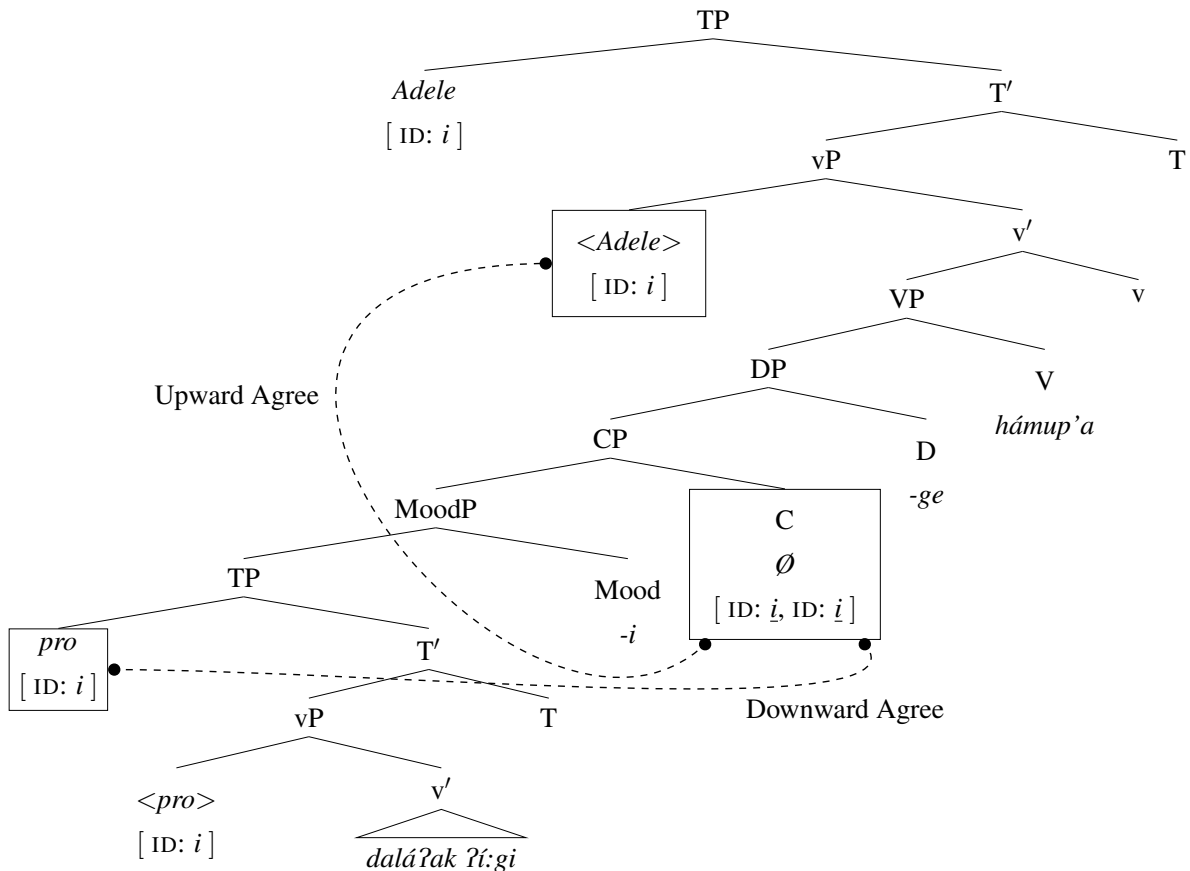 - T

Upward Agree

Downward Agree

This schematic shows that C first probes downward for the [ID] feature on *pro* from its derived position in Spec, TP, and copies its value, *j*, onto C. Embedded C then continues probing upward for the value of [ID] on superordinate *Adele* once it's merged in Spec, vP, and copies that value (*i*) as well. C stops probing once the higher C head is merged. Postsyntactically, the Vocabulary Insertion rule in (59a) applies due to the presence of two conflicting feature values on C, and as a result C is spelled out with the different-subject exponent *-š*.

Conversely, the following shows an example without feature conflict with coreferent subjects (repeated from (2)):

(23) a. **Adele**$_i$ [***pro***$_i$ daláʔak ʔíː:gi-yi-**Ø**-ge   ] hámup'a-yéː:s-i
      Adele$_i$ [***pro***$_i$ mountain 3/3.see-IND-**SS**-NM.ACC] 3/3.forget-NEG-IND
      'Adele$_i$ remembers that she$_i$ saw the mountain.'   Hanink & Bochnak 2018:67

14

b. *The derivation of same subject*

TP
Adele [ID: i]
T′
vP
T
<Adele> [ID: i]
v′
VP
v
DP
V
hámup'a
CP
D
-ge
MoodP
C Ø [ID: $\underline{i}$, ID: $\underline{i}$]
TP
Mood *-i*
pro [ID: i]
T′
vP
T
<pro> [ID: i]
v′
daláʔak ʔí:gi

Upward Agree

Downward Agree

The derivation proceeds here as in (22), but the SS marker is inserted into C according to the elsewhere rule in (59b) due to the absence of conflict in the featural make-up of C.

Some discussion of the position of the subject becomes relevant here. In the structures in (22) and (23), the subject is located in a derived position in Spec, TP. Given that Washo is a head-final language, the diagnosis of subject position based on standard tests (e.g. McCloskey 1997) is difficult. In any case, we assume that agreement with the embedded subject happens after movement so Spec, TP, while agreement with the matrix subject occurs before the subject has moved. Related to this, we assume that while vP constitutes a phase (necessitating agreement with the higher subject before its movement to Spec, TP), DP does not (cf. Adger 2003, Svenonius 2004, Bošković 2005, 2008, 2013, Lee-Schoenfeld 2008). If DP were a phase, embedded C would not be able to probe past its nominalization layer to agree with the superordinate subject in Spec, vP.[9]

---

[9]See also Bošković 2015 on the notion of phase *collapsing*, according to which D and C in clausal nominalizations might constitute a single phase barrier following head movement.

2.4 Interim summary

In this section we have shown that our analysis captures the three characteristics of switch refer-ence in Washo: i) the subordinate clause boundary requirement; ii) locality constraints; and iii) sensitivity to subjects only. We have offered an analysis involving agreement by C for the [ID] features on nominative DPs that captures all of these behaviors, and which draws close parallels between switch reference and complementizer agreement in West Germanic and Bantu. We have also drawn from independent work on feature conflict and inverse marking in Kiowa in order to motivate the overt realization of the DS marker as -*š*, where the null SS marker represents the absence of feature conflict on C.

3   Evidence for Upward Agree from the distribution of switch-reference environments

In the agreement-based analysis proposed here, at least some instances of switch reference involve an Upward Agree relation between embedded C and the matrix subject. In this respect, it crucially differs from other agreement-based analyses such as those in McKenzie 2012 and Clem 2019, in which the relation with the matrix subject is established in a different way. In this section, we discuss the predictions that these different views make, and argue that only Upward Agree predicts the distribution of switch reference found in certain embedded clauses in Washo. After briefly sketching the way in which the different analyses account for the relation with the matrix subject, we discuss switch reference in clausal nominalizations in object position, which are the basis for the argument that the relation with the matrix subject is established by Upward Agree in at least some cases. We then examine switch reference in other embedded clause types, which, arguably, are compatible with all the analyses discussed in this section.

## 3.1   Accounting for the relation with the superordinate subject

As described in the previous section, our analysis is based on the hypothesis that the switch-reference morpheme in embedded C establishes a relation with both the embedded and super-ordinate subjects by Agree. While the relation with the embedded subject is Downward Agree (i.e. C c-commands the embedded subject), the Agree relation with the superordinate subject is upward, that is, one in which the probe in C is c-commanded by the goal:

(24)   *SR-superordinate subject relation as Upward Agree*

TP
Subj
XP
SR clause
...
Upward
Agree
TP   C
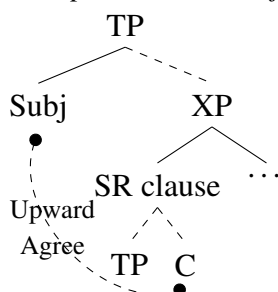
Crucially, the embedded clause is lower than the superordinate subject. In her analysis of switch reference in Amahuaca however, Clem (2019) explores a different possibility, namely that the Agree relation with the superordinate subject is downward. This is made possible by three additional hypotheses. First, the embedded clause hosting switch reference is higher than the matrix subject. Second, the embedded clause is CP, that is, the maximal projection of the head hosting the switch-reference probe. Third, the search domain of the downward probe in C is expanded to include the c-command domain of its maximal projection CP, by Cyclic Agree (Béjar & Rezac 2009). In effect, probing of the matrix subject is done downward by CP instead of C:[10]

(25)   *SR-superordinate subject relation as Downward Agree (Clem 2019)*

TP
SR clause   CP   Downward   TP
Agree
TP   C   Subj   ...
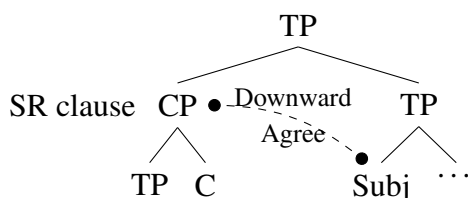
Despite the similarity of the analyses, there is at least one important difference that is empirically testable:[11] Under Upward Agree (24), the matrix subject must be higher than the embedded clause, but this relation is reversed in the Downward Agree account (25).
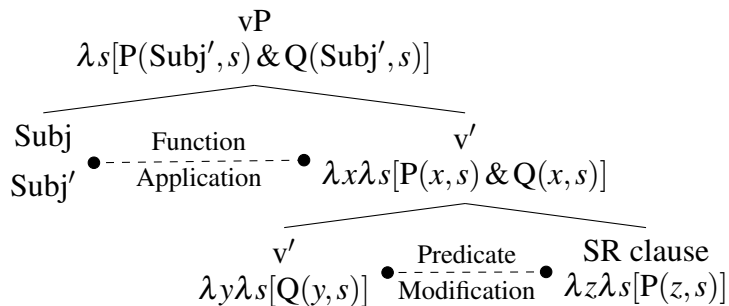
What the two analyses discussed so far have in common is that the Agree relation with the matrix subject (whether Upward or Downward) is not constrained by strict locality conditions beyond those required for Agree, as discussed in the previous section. This is in contrast with the

---

[10]In Amahuaca, switch reference tracks objects in addition to subjects. In terms of an agreement-based account, this means that the probe is not restricted to goals that are nominative. We abstract away from these details in the current discussion.

[11]Another difference, discussed in the next section, is that the Downward Agree account relies on the switch reference morpheme being hosted in the highest head in the embedded clause, but this is not the case for the Upward Agree account.

proposal in McKenzie 2012, which imposes a much stricter locality condition, to which we now turn. In McKenzie's agreement-based analysis of switch reference in Kiowa, the relation between the switch-reference morpheme and the embedded subject is mediated by Agree, but this is not the case with respect to the superordinate subject. Rather, the embedded clause hosting the switch reference morpheme is interpreted as a one-place predicate (type $\langle e, \langle s, t \rangle \rangle$) whose argument is the superordinate subject. Because of this predication relation, the superordinate subject binds an index in the embedded switch-reference morpheme, whose denotation imposes (non)identity conditions between the referents assigned by the assignment function to this index and the index of the embedded subject (which the switch reference morpheme inherits by Agree; see McKenzie 2012:190–196 for details). In effect, this entails that the embedded clause must be the sister of some matrix constituent that is also a one-place predicate; by Predicate Modification (Heim & Kratzer 1998), these two predicates can jointly take the superordinate subject as their argument:

(26)   *SR-superordinate subject relation as predication (McKenzie 2012)*

$$vP$$
$$\lambda s[P(\text{Subj}', s) \,\&\, Q(\text{Subj}', s)]$$

Subj
Subj' • - - - Function - - - • v'
Application $\lambda x \lambda s[P(x,s) \,\&\, Q(x,s)]$

v'   SR clause
$\lambda y \lambda s[Q(y,s)]$ • Predicate • $\lambda z \lambda s[P(z,s)]$
Modification

Due to standard locality conditions on semantic composition, the embedded clause must thus be merged immediately below the superordinate subject, as depicted in (26). For the purposes of this section, we refer to this specific structural relation between the matrix subject and embedded clause as being *strictly local*, and limit our use of this expression to describe this specific case.

To summarize, our Upward-Agree analysis makes the following predictions regarding the relative position of the matrix subject and the embedded clause hosting switch reference:

(27)   *Predictions of Upward Agree*

    a.   The switch-reference clause is lower than the superordinate subject.
    b.   The switch-reference clause is not strictly local to the superordinate subject.

In contrast to (27a), the Downward-Agree-based analysis in Clem 2019 predicts that the switch-reference clause is *higher* than the matrix subject, while McKenzie's (2012) predication-based

account predicts that this relation is strictly local, contrasting with (27b). As we show in the next subections, both predictions of our Upward-Agree analysis are born out by switch reference in clausal nominalizations, providing a basis for the need for this type of agreement relation.

3.2 Switch reference in object clausal nominalizations

Several types of embedded clauses in Washo are nominalized clauses, which are marked with the verb-final suffixes *-ge* for clauses in accusative position, or *-gi* for clauses in nominative position. All nominalized clauses show switch reference, and, as shown below, clausal complements of factive and perception verbs must be nominalized:[12]

(28)   *Switch reference in complements of factive verbs*

  a. *Different subject*
   pro$_i$ [Adele$_j$ di:meʔ su:biʔ-i-š-ge   ] di-hámup'ay-e:s-i
   pro$_i$ [Adele$_j$ water 3/3.bring-IND-DS-NM.ACC] 1/3-forget-NEG-IND
   'I$_i$ remember that Adele$_j$ brought the water.'

  b. *Same subject (=(23a))*
   Adele$_i$ [*pro$_i$* daláʔak ʔí:gi-yi-Ø-ge   ] hámup'a-yé:s-i
   Adele$_i$ [*pro$_i$* mountain 3/3.see-IND-SS-NM.ACC] 3/3.forget-NEG-IND
   'Adele$_i$ remembers that she$_i$ saw the mountain.' Hanink & Bochnak 2018:67

(29)   *Different subject in complements of perception verbs*[13]
  pro$_i$ [sísu$_j$ ʔíšim-i-š-ge   ] di-dámal-i
  pro$_i$ [bird$_j$ 3.sing-IND-DS-NM.ACC] 1/3-hear-IND
  'I$_i$ hear the bird$_j$ singing./I$_i$ hear the bird$_j$ that is singing.'
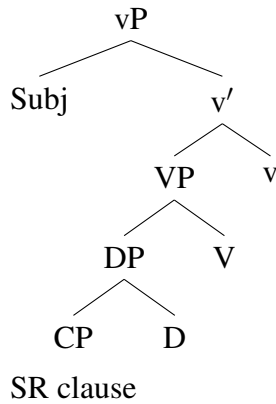
Since these clauses are in the complement position of the matrix verb, the fact that they are marked for switch reference is only compatible with the predictions of our Upward Agree account:[14]

---

[12]We discuss the internal structure of clausal nominalizations in the next section.

[13]We do not have examples of this type with coreferent subjects. As illustrated by the translation in (29), nominalized complements of perception verbs are often ambiguous between a complement-clause reading and a relative-clause reading, as the latter are internally headed in Washo. As we show below, relative clauses in object position also constitute an argument for Upward Agree, and thus sentences such as (29) are evidence for the analysis under either the complement-clause or the relative-clause parse.

[14]Although switch reference frequently occurs in adverbial clauses crosslinguistically, it is also possible in complement clauses in several languages (McKenzie 2015:431). A well-studied case is Choctaw (Broadwell 2006:268–282).

(30)   *Complement clauses are too far below the superordinate subject*

```
              vP
           ╱      ╲
       Subj        v′
                 ╱    ╲
               VP       v
             ╱    ╲
           DP      V
         ╱   ╲
       CP      D
    SR clause
```

The logic behind this claim is that the embedded clause is lower than the subject (prediction (27a)), and is not strictly local with the subject in the sense defined in the previous subsection (prediction (27b)). This contrasts with the predictions of Clem's (2019) Downward Agree analysis, in which the embedded clause should be higher than the subject, as schematized in (25), as well as those of a predication-based account (McKenzie 2012), according to which the embedded clause should be closer to the subject (see (26)).[15]

A similar argument can be made on the basis of relative clauses in object position, which are also marked for switch reference. Relative clauses are always internally headed and nominalized in Washo, and their surface morphology is the same as found in all clausal nominalizations, occuring with a final nominalizing suffix that is accusative *-ge* in relative clauses in object position (we discuss the internal structure of relative clauses in the next section):

(31)   *Switch reference in internally headed relative clauses in object position*

   a. *Different subject*
       [daʔmóʔmoʔ$_j$ gó:beʔ ʔí:miʔ-i-š-ge   ] lé:$_i$-saʔ   l-é:me-gaʔlá:m-i
       [woman$_j$ coffee 3/3.drink-IND-DS-NM.ACC] 1.PRO$_i$-also 1/3-drink-want-IND
       'I$_i$ also want to drink the coffee that the woman$_j$ is drinking.'

   b. *Same subject*
       pro$_i$ [*pro$_i$* git-ŋaʔmíʔmiŋ bó:ŋ-i-yi-Ø-ge   ] wehigí:git-ha-aʔ
       pro$_i$ [*pro$_i$* 3-child.R   3/3.call-IND-SS-NM.ACC] 3/3.instruct-CAUS-DEP
       'She$_i$ instructed her children who she$_i$ called.'   Bear and Deer Story; Washo Tribe

---

[15]Noting the potential problem that switch reference in complement and relative clauses poses for his account, McKenzie suggests ways in which the account could be extended to cover them, but does not offer any detailed analysis (McKenzie 2012:256–261).

As in other cases of switch reference, the embedded switch reference marker tracks the reference of superordinate and embedded subjects (independently of whether the embedded subject is the internal relative-clause head or not): different subject *-š* in (31a), and same subject *-Ø* in (31b). Since these nominalizations are complements of V, they provide an additional argument for Upward Agree.

We note that one important property of embedded clauses in Washo that may have an effect on the argument above is that they tend to be peripheral within the superordinate clause. Although Washo is a pro-drop language, subjects can be overt, and, like other constituents, are often preceded by embedded clauses, even when the latter are verbal complements. For instance, the matrix pronominal subject *lé:* 'I' in (31a) follows the relative clause that is interperted as the direct object. This might be taken as evidence that embedded clauses are in a high position above subjects. If so, their syntax would be compatible with a Downward-Agree account (see (25)), contrary to our conclusion above. However, the peripheral position of embedded clauses is not a requirement, only a strong tendency. In particular, it is grammatical for an object clause to either precede or follow the matrix subject.[16] Consider the following minimal pair ((32b) repeated from (22)):

(32)   *Variable position of object relative clauses*

    a. [ʔum-bašáʔ-ayt'iʔ-i-š-ge   ] Adele mušéʔeš-i
        [2/3-write-PLUP-IND-DS-NM.ACC] Adele 3/3.read-IND
        'Adele's reading what you wrote.'

    b. Adele [ʔum-bašáʔ-ayt'iʔ-i-š-ge   ] mušéʔeš-i
        Adele [2/3-write-PLUP-IND-DS-NM.ACC] 3/3.read-IND
        'Adele's reading what you wrote.'

The relative clause in object position can either precede (32a) or follow (32b) the matrix subject. This variation in word order is also observed with respect to other object nominalized clauses, such as complements of factive verbs:

---

[16]Because of pro-drop, and the general V-final syntax of the language, it is sometimes not clear whether a given subject should be parsed in a matrix or embedded clause. For instance, both the embedded and matrix subjects in (28b) refer to Adele, but the sentence only contains one overt subject, namely *Adele*. Thus, one of the subjects is *Adele* and the other is pro-dropped, but it is not obvious which is which. Our parse in (28b) places the name in matrix subject position, but we have done this only for ease of exposition. A potential argument that this is the correct parse is that the reverse parse, with *Adele* in embedded subject position, would constitute a violation of Condition C. If that were the case, examples of this type would be valid instances of object clauses following matrix subjects. However, Condition C has not been studied in any detail in Washo, and we thus refrain from reaching this conclusion.

(33)   *Variable position of factive clauses*

    a.   [Eddy gúdiŋa da-ŋám-he:š bugayáy-i-š-ge   ] Adele ʔášaš-i

        [Eddy who   3-son-Q   3.talk-IND-DS-NM.ACC] Adele 3.not.know-IND

        'Adele doesn't know whose son Eddy's talking to.'

    b.   Adele [Eddy gúdiŋa-he:š ʔí:gi-yi-š-ge   ] ʔášaš-é:s-i

        Adele [Eddy who-Q   3/3.see-IND-DS-NM.ACC] 3.not.know-NEG-IND

        'Adele knows who Eddy saw.'

We take this to mean that object clauses (including relative clauses) are generated as complements of V, but can dislocate to a position above subjects. Crucially, the embedded clause has the exact same switch-reference marking under both orders, as expected by our Upward-Agree account. The Agree relation between the embedded switch reference morpheme and the matrix subject is established from the base position of the embedded clause, and therefore must be Upward. In (32a), subsequent dislocation of the embedded clause results in its surface order preceding the matrix subject. In sum, a Downward-Agree relation between the switch reference marker and the matrix subject might be possible in the example with dislocation (32a), but not in the example in which the embedded clause follows the matrix subject (32b).

3.3   Switch reference in other clause types

In this subsection, we extend our account to other Washo clause types that display switch reference, and briefly comment on how the other analyses discussed here can account for the data.

    Clausal nominalizations (including relative clauses) can be in subject position, in which case the nominalizing suffix is nominative *-gi*. Like other nominalizations, subject clauses are marked for switch reference. Consider first the clausal subjects of predicates such as *good*:

(34)   *Different subject in clausal subjects*

    a.   [*pro$_j$* m-í:bi-yi-š-gi   ]$_i$ t'-áŋaw   k'-éʔ-i

        [*pro$_j$* 2-come-IND-DS-NM.NOM]$_i$ NM-good 3-be-IND

        'I'm glad you came. (lit. It's good you came.')

    b.   [*pro$_j$* lem-í:gi-e:biʔ-i-š-gi   ]$_i$ t'-áŋaw   k'-éʔ-i

        [*pro$_j$* 1/2-see-come-IND-DS-NM.NOM]$_i$ NM-good 3-be-IND

        'It's good you came to see me.'

In this clause type, the embedded subject is the subject of a clause that denotes a proposition but is itself the subject of the matrix clause, so the two subjects are necessarily disjoint in reference; as

a result, only different subject marking is possible. Note that nominalizations in subject position can also be relative clauses, and, as expected, also display switch reference from this position:

(35) *Switch reference in internally headed relative clauses in subject position*

    a. *Different subject*

       [daʔmóʔmoʔ$_j$ gó:beʔ ʔí:miʔ-i-š-gi   ]$_i$ métuʔ-i

       [woman$_j$ coffee 3/3.drink-IND-DS-NM.NOM]$_i$ 3.be.cold-IND

       'The coffee the woman is drinking is cold.'

    b. *Same subject*

       [daʔmóʔmoʔ$_i$ gó:beʔ ʔí:miʔ-i-Ø-gi   ]$_i$ la-sú:dim-i

       [woman$_i$ coffee 3/3.drink-IND-SS-NM.NOM]$_i$ 3/1-look.at-IND

       'The woman who is drinking coffee is looking at me.'

In this case, the nominalized clause denotes the same individual as its internal head, which can be formed out of any argument in the embedded clause (e.g. the object in (35a) and the subject in (35b)). This allows for both different-subject (35a) and same-subject (35b) marking in this type of clause.

    What is special about switch reference in subject nominalized clauses is therefore that the embedded switch reference marker in C agrees with a matrix DP that itself dominates C. We model this by adopting the natural assumption that the index on this DP is shared by its D head, and that it is the index on D that C probes in an Upward Agree relation:

(36) *Agree with higher subject in subject clauses*
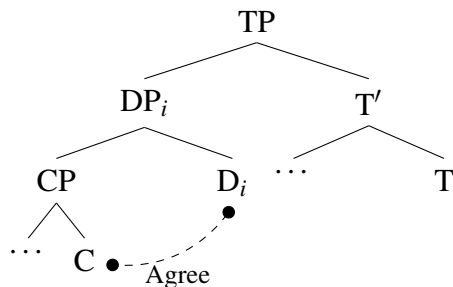
Given the structure in (36), other accounts of switch reference can also accommodate sentential subject clauses in Washo. First, under Clem's (2019) Downward Agree account, D is probed from CP, not C, and thus the relation can be modeled as being downward. Second, McKenzie's (2012) predication-based account can also be naturally extended to cover this case. Specifically, if we adopt the natural assumption that D is interpreted as a determiner, it can take the predicate-

denoting complement CP as its argument, with the result that the DP headed by D, i.e. the matrix subject, in effect binds the index in the embedded switch-reference morpheme.

Relatedly, switch-reference marking is also present in adjunct clauses of different types in Washo. We illustrate these with -*ʔa* clauses, which usually have a simultaneous temporal reading roughly translatable to English as *when* or *while* clauses, or as coordination with *and* (Bochnak & Hanink 2019):

(37) *Switch reference in adjunct clauses*

   a. *Different subject*
      [súkuʔ$_i$ le-gí:t'i-a-š   ] *pro$_j$* de-gum-suʔúš-leg-i
      [dog$_i$ 1-bite-DEP-DS] *pro$_j$* 1-REFL-dream-REC.PST-IND
      'I was dreaming while the dog bit me.'   Washo Archive

   b. *Same subject*
      [mé:hu$_i$ ʔélšim-aʔ-Ø   ] *pro$_i$* ʔémc'i-gaʔlám-é:s-i
      [boy$_i$ 3.sleep-DEP-SS] *pro$_i$* 3.wake.up-want-NEG-IND
      'The boy is sleeping and he doesn't want to wake up.'
      (Lit.: 'While the boy's sleeping, he doesn't want to wake up.')

Unlike other clause types discussed earlier in this section, adjunct -*aʔ* clauses do not have a nominalization layer. They are characterized by the so-called dependent mood suffix -*aʔ*,[17] a realization of the Mood head (Hanink & Bochnak 2018). The highest head in the clause is C, the switch-reference probe in Washo, and thus surfaces as the different or same subject marker ((37a) and (37b), respectively), tracking the reference of the subject of the adjunct clause and the subject of the superordinate clause.

Both McKenzie 2012 and Clem 2019 can easily accommodate switch-reference marking in adjunct clauses, and, in fact, switch reference of the type discussed in this paper is only present in adjunct clauses in the languages those accounts focus on (Kiowa and Amahuaca, respectively).[18] The two analyses, however, differ with respect to the relative position of the switch-reference-bearing adjunct clause and the superordinate subject, in line with the differences between the two accounts sketched above. Under McKenzie's (2012) predication account, the adjunct clause is lower than the superordinate subject, but in Clem's (2019) Cyclic Agree account, the adjunct clause

---

[17]The dependent mood suffix has allomorph -*a* before the different subject maker -*š* (Jacobsen 1964:368). In (37a) the suffix surfaces as -*ya* due to a regular process of *y*-epenthesis between vowels (Jacobsen 1964:260–265).

[18]Kiowa also has so-called *noncanonical* switch reference, in which switch reference does not track the reference of arguments in the clauses it relates, but something else (situations, according to McKenzie 2012). Noncanonical switch reference in Kiowa is restricted to coordination, whereas *canonical* switch reference (i.e. one that tracks the reference of arguments) only appears in adjunct clauses.

is higher. Clem claims that switch-reference-marked adjunct clauses are higher than the lowest position of superordinate subjects in Amahuaca, a claim she supports based on word order and Condition C connectivity effects.

The relevant facts showing whether adjunct clauses are higher or lower than subjects in Washo are not available to us at present. As in (37a) above, it is very common for both the embedded and the superordinate subject to be pro-dropped, which makes it impossible to ascertain the position of the subject based on linear order. In same-subject examples, it is also often the case that only one of the subjects is overt, and if it precedes both the matrix and embedded clause, as in (37b), word order alone is not sufficient to ascertain whether it belongs in one clause or the other.[19] In all examples that we have in which an overt subject is only parsable as a superordinate subject, it follows the adjunct clause:

(38) [súkuʔ Muʔúš-uwaʔ-a-š   ] búːši ʔélšɨm-i
      [dog   3.run-hence-DEP-DS] cat   3.sleep-IND
      'The dog ran and the cat slept.'
      (Lit.: 'While the dog ran, the cat slept.')

The multiple-agreement analysis of Washo switch reference advocated here is compatible with either option. If it turns out that adjunct clauses are lower than superordinate subjects (as McKenzie claims for Kiowa), this would be evidence for an analysis in which the relation between C and the superordinate subject is consistently Upward Agree. However, if adjunct clauses are higher than superordinate subjects (as in Amahuaca), this would be evidence for adopting a Cyclic-Agree-based account for the specific case of switch reference adjunct clauses. This, however, would not weaken the arguments elsewhere in this paper that Upward Agree is needed to account for switch reference in nominalized clausal complements.

4   Evidence for upward Agree from the internal structure of switch-reference clauses

In this section, we present additional evidence for the claim that Upward Agree is needed in order to account for at least some cases of switch reference. The argument is based on the specific functional head (C) that switch-reference exponents realize: In clausal nominalizations, this head is crucially not the highest head, as CP is dominated by a DP projection. This specific clause-internal position for an embedded probe that enters into a relation with a superordinate subject is too low for a Downward/Cyclic Agree approach (Clem 2019), but is compatible with Upward

---

[19]The brackets in (37b) represent the embedded parse, but we have done that only for convenience, and does not reflect a commitment in our part for this particular parse.

Agree. In addition, this position is too high for Keine's (2013) low-coordination analysis of switch reference, lending further support for the present proposal.

4.1 The structure of the Washo clause

As we saw in the previous section, switch-reference marking in Washo appears in embedded nominalized clauses as well as in different types of adjunct clauses. In this subsection, we argue that these clause types (especially nominalizations) are not reduced in any way, but have a full sequence of functional heads also found in matrix sentences, and that, within this sequence, the switch-reference morpheme is hosted by a high-peripheral functional head, which we identify as C, following Finer 1985, Peachey 2006, and Hanink 2016.

Although Washo is an optional-tense language (see Bochnak 2016), tense marking is possible – both in matrix sentences and in clausal nominalizations – as suffixal material on the verb. This is illustrated in the following examples with the distant future suffix *-gab* and pluperfect *-ayt'iʔ*:[20]

(39) *Tense marking in matrix sentences*

    a.   gúŋa-he:š béverli wát   ʔéʔ-**gab**-i

         where-Q   Beverly tomorrow 3.be-**DIST.FUT**-IND

         'Where will Beverly be tomorrow?'   Washo Archive

    b.   da-hé:š ʔaʔ-**áyt'iʔ**-i   ʔló:t

         there-Q 3.be-**PLUP**-IND yesterday

         'Was he there yesterday?'   Washo Archive

(40) *Tense marking in different-subject nominalizations*

    a.   [béverli wát   l-í:gi-**gab**-i-š-gi   ] k'-éʔ-i

         [Beverly tomorrow 1/3-see-**DIST.FUT**-IND-DS-NM.NOM] 3-be-IND

         'I will see Beverly tomorrow.'

         (Lit. 'It is that I will see Beverly tomorrow.')   Washo Archive

---

[20]The nominalized embedded clauses in (40a) and (41) are subjects of the copula *eʔ* (that they are in subject position is diagnosed by the specific form of the nominalizer *-gi*; see below). The different-subject marker in (40a) is expected, given that the embedded subject (*Beverly*) and the matrix subject (the embedded clause itself) are disjoint. Interestingly, the nominalization can be an internaly-headed relative clause. When the relativized argument is the subject, this triggers same-subject marking, as the two subjects are coreferent. This explains the same-subject suffix in (41). These copular constructions are often interperted as modal or generic (Bochnak 2015), but the specific modal flavor used in particular examples is sometimes hard to ascertain. The literal translations given in (40a) and (41) should be taken as very rough approximations to the meanings of these sentences.

b. Adele [ʔum-bašáʔ-**ayt'iʔ**-i-š-ge] mušéʔeš-i

   Adele [2/3-write-**PLUP**-IND-DS-NM.ACC] 3/3.read-IND

   'Adele's reading what you wrote.'

(41) *Tense marking in same-subject nominalizations*

[wát   dubáldiʔ ʔugálisi-**gab**-i-Ø-gi   ] k'-éʔ-i

[tomorrow five   have.years-**DIST.FUT**-IND-SS-NM.NOM] 3-be-IND

'He will be five years old tomorrow.'

(Lit. 'It's him that will be five years old tomorrow.')   Washo Archive

Both tense suffixes are found in matrix sentences, as shown in (39), and in nominalizations (-*gab* in (40a) and (41), and -*ayt'iʔ* in (40b) (repeated from (32b)). This is evidence that both matrix sentences and nominalizations have a TP projection. Moreover, the position of the different-subject marker -*š* to the right of both tense suffixes in (40) shows that switch reference is hosted by a functional head above T, consistent with our claim that this head is C.

In addition, one of two mood markers is present in every clause. The so-called *independent* mood verbal suffix -*i* is found in all matrix clauses as well as in embedded clauses that are non-inalized, as illustrated in (40)–(41). The *dependent* mood marker -*aʔ* is suffixed to verbs in temporal adjuncts (e.g. (38)) as well as in clauses embedded by non-factive verbs (Hanink & Bochnak 2018).[21] Following Hanink 2016 and Hanink & Bochnak 2018, we assume that these are the realization of the functional head Mood. As shown by the position of independent mood -*i* between the tense suffixes and different-subject -*š* in (40), MoodP projects immediately above TP and immediately below the head hosting switch-reference marking, which provides further evidence for the high position (C) of the latter.

Finally, the only suffix that follows the switch-reference marker is the nominalizer in clausal nominalizations, such as -*gi*/-*ge* in (40)–(41). We assume that this is the realization of a D head whose complement is CP (Peachey 2006, Hanink 2016).[22] Evidence for the nominal status of this suffix is the fact that, as shown in the previous section, it alternates for case, which reflects the grammatical role that the embedded clause takes in the superordinate sentence (Jacobsen 1964:666). Specifically, nominative -*gi* surfaces in clausal subjects, and accusative -*ge* in complements of verbs and postpositions:

---

[21]The dependent mood suffix -*aʔ* occasionally appears in what appears to be a matrix clause, such as (31b). This tends to occur in narrative contexts, in which the -*aʔ*-marked clause is followed by a sentence that continues the story, as is the case in (31b). These are plausibly analyzed in terms of subordination with respect to the upcoming sentence.

[22]Though see Hanink 2019 for the the claim that the structure of the nominalizer is in fact more complex.

(42) *Nominative subject: -gi (=(35b))*

[daʔmóʔmoʔ gó:beʔ ʔí:miʔ-i-Ø-**gi**] la-sú:dim-i
[woman   coffee 3/3.drink-IND-SS-**NM.NOM**] 3/1-look.at-IND
'The woman who is drinking coffee is looking at me.'

(43) *Accusative complement of V: -ge*

[daʔmóʔmoʔ gó:beʔ ʔí:miʔ-i-š-**ge**] di-sú:dim-i
[woman   coffee 3/3.drink-IND-DS-**NM.ACC**] 1/3-look.at-IND
'I'm looking at the woman who is drinking coffee.'

(44) *Accusative complement of P: -ge*

[gó:beʔ l-é:meʔ-áŋaw-i-Ø-**ge**] -lu   di-p'ím-eweʔ-giš-i
[coffee 1/3-drink-good-IND-SS-**NM.ACC**] -with 1-go.out-hence-DUR-IND
'I keep going out because of the coffee that I drank.'
='With all the coffee I drank, I keep going out.'   Hanink 2019:15

Taken together, the tree in (46) then schematizes our analysis of the clause structure of nominalizations such as the one in (45) (repeated from (29)):

(45) [sísu ʔíšim-i-š-ge] di-dámal-i
[bird 3.sing-IND-DS-NM.ACC] 1/3-hear-IND
'I hear the bird singing.'

(46) *The internal structure of nominalized clauses*
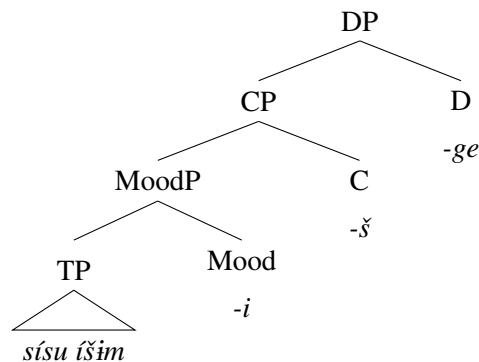
Clauses with the mood marker *-aʔ*, as found in temporal adjuncts, differ from their independent mood counterparts in that they never occur with a nominalizer (Jacobsen 1964). Our analysis of the internal strucutre of adjunct clauses such as (47) (repeated from (37a)) is represented in (48).

(47)   [súkuʔ$_i$ le-gí:t'i-a-š   ] *pro$_j$* de-gum-suʔúš-leg-i

      [dog$_i$ 3/1-bite-DEP-DS] *pro$_j$* 1-REFL-dream-REC.PST-IND

      'I was dreaming while the dog bit me.'

(48)   *The internal structure of adjunct clauses*
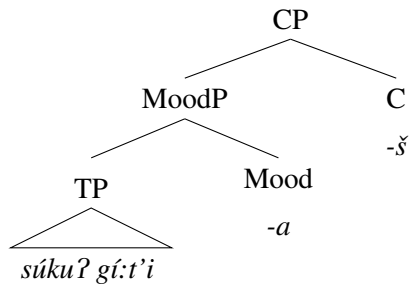
In both nominalized and adjunct clauses, switch reference is hosted high in the clause, above T and Mood, in embedded C.

Typologically speaking, Washo is unique in having switch reference so high in the clause, with many switch-reference languages encoding the marker in a lower position (McKenzie 2015:440–442). As we show in Subsection 4.3, this poses a challenge to the low coordination analysis of switch reference in Keine (2013), in which switch-reference clasues are claimed to be structurally reduced. In the next subsection, we argue that the fact that switch reference is not hosted by the highest head in nominalizations is problematic for the agreement-based account in Clem 2019, which provides further support for the view that Upward Agree is a necessary component of the analysis of switch reference.

## 4.2   A further argument for Upward Agree

As discussed in Section 3, Clem's (2019) analysis of switch reference in Amahuaca relies on the ability of an embeddded CP to probe downward for the index feature of a superordinate argument (after embedded C has probed for the index feature of the embedded argument). This is due to Cyclic Agree, which licenses probing by projections of the head with the probe features. This works well for switch reference in Amahuaca, as well as in Washo adjunct clauses: In both cases, the switch-reference morpheme is hosted by the highest functional head (C) in the embedded clause, whose maximal projection c-commands material in the superordinate clause. Unlike Washo adjunct clauses, the Amahuaca switch-reference morpheme also expresses the case of the tracked arguments, but, crucially for this analysis, these features are exponed together with switch

reference in a portmanteau, and thus do not represent functional heads that are separate and higher than the C head hosting switch reference.

Such an account cannot extend to Washo nominalized clauses, in which the switch reference probe is in C, but its maximal projection is dominated by a DP layer. The predictions for a nominalization such as (49) (repeated from (45)) are represented in (50):

(49) [sísu ʔíšim-i-š-ge   ] di-dámal-i
      [bird 3.sing-IND-DS-NM.ACC] 1/3-hear-IND
      'I hear the bird singing.'

(50) *The predicted Downward Agree domain for the CP probe in object nominalizations*
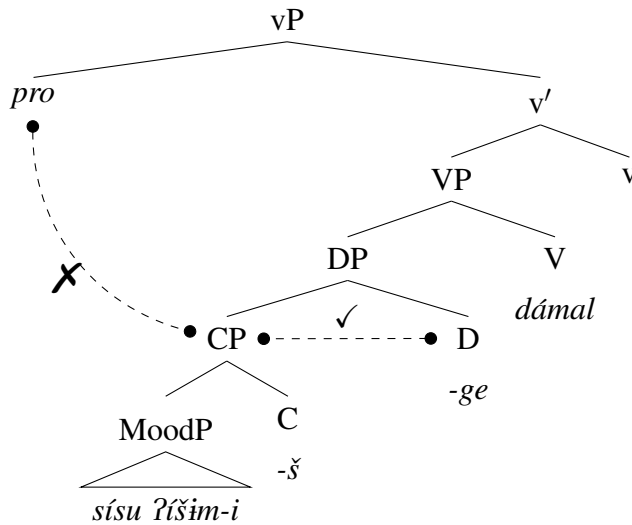
As depicted above, the c-command domain of the CP probe only contains the D heading the nominalized clause. The specific wrong prediction is thus that the matrix subject is not a possible goal for this probe. This is contrary to fact: Different-subject marking in (49) is the result of a relation between the embedded host of switch reference and the matrix subject. Importantly, although the nominalizing suffix (-*ge* in the example above) does express case, unlike Amahuaca switch-reference clauses, this is expressed as a separate morpheme outside the different-subject marker, which must therefore be interpreted as the realization of a higher head (D) within the embedded clause. Although DP does c-command material in the superordinate clause, CP is too deeply embedded to do so.

To summarize the arguments presented in the previous and present section: Washo nominalized clauses in object position present two challenges to an approach to switch reference that relies solely on Downward Agree. First, the subordinate clause is too low within the superordinate
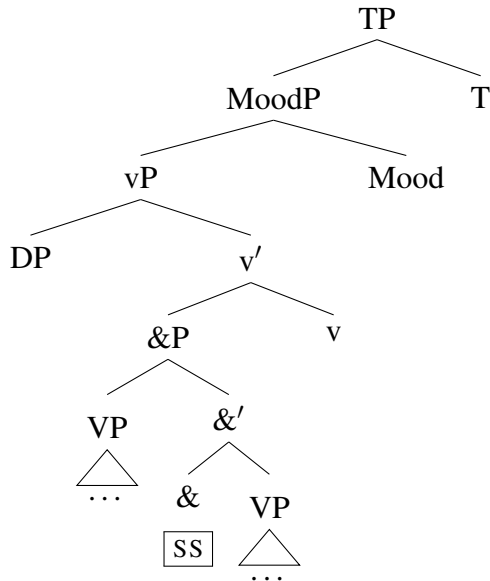
clause (as the complement of V) for any probe within it to c-command the higher subject. Second, the probe itself (C) is too deeply embedded within the subordinate clause for it or its maximal projection (CP) to c-command into the matrix clause. Although the evidence they are based on is the same, the two arguments are distinct. At the end of subsection 3.2, we saw that these object nominalizations are indeed in the complement position of the superordinate V. If this were not the case and evidence could be found that these clauses are in a higher position, our first argument would not be valid. However, the second argument would remain: Even from this high position, the probe would be too deeply embedded within the superordinate clause to c-command any material in the superordinate clause.

No such problems arise under the account proposed here: The relation between embedded C and the matrix subject is successfully mediated by Upward Agree, as the superordinate subject (the goal) c-commands embedded C (the probe).

4.3   Switch reference is not a marker of coordination height
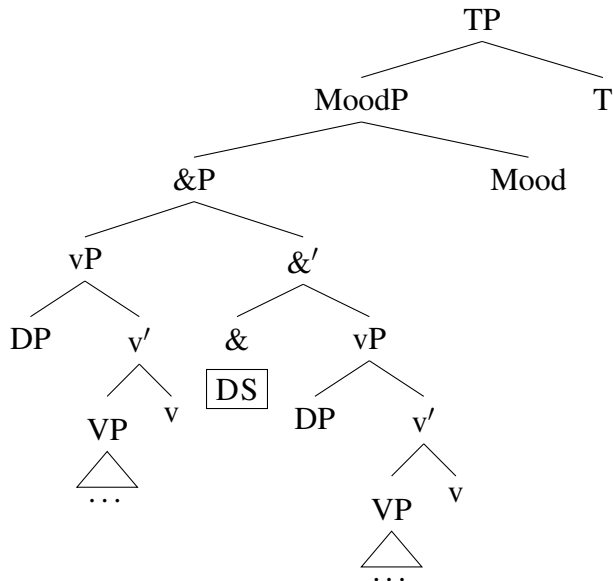
In a different vein, Keine 2013 is a syntactic analysis of switch reference in several languages (Seri, Amele, and Kiowa) that does not involve any sort of direct relation between the syntactic host of switch reference morphology and the tracked arguments. Instead, Keine claims that the phenomenon involves coordination of the constituents whose arguments are tracked by the switch-reference marker, and that the marker itself signals the size of the coordinates. Specifically, the marker is the realization of the coordinating particle, whose exponence is sensitive to the category of the coordinates. One the one hand, SS marking is analyzed as coordination of relatively small constituents that do not include the subject (i.e. VP):

(51)   *Keine's (2013) proposal for SS marking*

```
                          TP
                       ┌───┴───┐
                     MoodP      T
                   ┌───┴───┐
                  vP       Mood
               ┌───┴───┐
              DP        v′
                     ┌──┴──┐
                    &P      v
                 ┌───┴───┐
                VP        &′
                △      ┌──┴──┐
               …      &      VP
                    ┌──┐     △
                    SS       …
```

As a result, the two coordinates share a single subject projected above the coordination. This derives the same-subject interpretation not by coreference or binding, as in other analyses, but by actual syntactic sharing of a single subject by both predicates. In contrast, different-subject marking on the other hand involves coordination of larger constituents (vPs):

(52)   *Keine's (2013) proposal for DS marking*

```
                          TP
                       ┌───┴───┐
                     MoodP      T
                   ┌───┴───┐
                  &P       Mood
              ┌────┴────┐
             vP          &′
          ┌───┴───┐   ┌───┴───┐
         DP       v′  &       vP
               ┌──┴──┐ ┌──┐ ┌──┴──┐
              VP     v DS  DP     v′
              △                ┌──┴──┐
             …                VP     v
                              △
                             …
```

32

The two coordinates each include a separate subject, which leads to a disjoint reference effect.[23]

Keine argues that, in the languages that he accounts for in this way (Seri and Amele), the coordinated constituents are indeed small (VP or *v*P). The evidence comes from the fact that in these languages, the exponents of the higher functional heads (Mood and T in (51) and (52)) are impoverished in different ways in the first coordinate. In some cases, these exponents are missing from the first coordinate. Since the heads they expone are above the coordination, they are linearized after the second coordinate (i.e. as suffixes on the verb in the second coordinate, as these languages are head-final). In other cases, the exponents are present as affixes on the verb in the first coordinate, but they have to featurally match the corresponding affixes on the verb in the second coordinate. For these exponents, Keine argues that they are not the exponents of the corresponding functional heads above &P. Rather, the feature content of these functional heads is transmitted to the verbs in both coordinates by agreement that is exponed by these affixes, which accounts for the matching effect.

Switch reference in Washo poses several challenges for this account. First, as discussed in subsection 4.1, Washo clauses with switch reference have a full sentential spine that includes (at least) both TP and MoodP. The heads of these functional projections are realized as suffixes on the switch reference-marked verb, and don't necessarily featurally match the corresponding inflectional heads on the verb in the other clause. This is furthermore the case in both different-subject and same-subject clauses. For instance, the switch reference clauses in (40a) and (41) contain a future-tense suffix that is not matched by the verb in the other clause. Similarly, the adjunct clauses in (37a) and (37b) have the dependent mood suffix -*aʔ*, mismatched by the independent mood suffix -*i* on the verb in the other clause.

Second, Washo embedded clausal nominalizations cannot be analyzed in terms of coordination. Consider the following example (repeated from (32a)):

(53)   [ʔum-bašáʔ-ayt'iʔ-i-š-ge   ] Adele mušéʔeš-i
         [2/3-write-PLUP-IND-DS-NM.ACC] Adele 3/3.read-IND
         'Adele's reading what you wrote.'

This sentence (and perhaps many others) does have a coordination-like paraphrase in English:

(54)   You wrote something, and Adele is reading it.

---

[23]The exact disjoint-reference effect varies from language to language. See Keine 2013 for details. As may be expected, the analysis is flexible enough to allow for coordination of other categories such as TP or CP, which Keine (2013:807–811) uses in his analysis of of noncanonical swith reference in Kiowa. However, his analysis of canonical switch reference only involves coordination of smaller categories (VP and *v*P).

Under a coordination analysis, the first clause in (53) would be an initial coordinate instead of an embedded clause. The problem is that coordination would not be able to explain the fact that the nominalizer (-*ge* in this example) expones the case corresponding to its subordinate position in the superordinate clause. In the example above, this is accusative -*ge*, as expected for nominalized clause that is the internal argument of the matrix verb. In addition, the paraphrase in English (54) relies on an anaphoric link (in the shape of the pronoun *it*) between the object of *read* and the initial coordinate. This might seem like a plausible analysis of the second clause in (53), as Washo has object drop. However, object drop in Washo is flagged by special verbal agreement morphology, called *unexpressed-object* marking in Jacobsen 1964:462, which is absent in (53) (and any other example with object nominalizations in this paper).[24] The verb *mušéʔeš* 'read' in this example has a null person 3-on-3 agreement prefix, which is used whenever the object is present, as in the following:

(55)   *Null 3/3 prefix with present object (=(14a))*

gí: pélew   ʔíʔiw-i
3.PRO.NOM jackrabbit **3/3**.eat-IND
'He's eating the jackrabbit.'   Jacobsen 1979:151

This contrast with cases in which the object is dropped ('unexpressed' in Jacobsen's terminology), in which case the 3-on-3 prefix is overt and has various phonologically conditioned allomorphs:

(56)   *Overt 3/3 prefix with dropped object*

    a.   gí: **k'**-íʔiw-i
             3.PRO.NOM **3/3**UN-eat-IND
             'He's eating it.'   Jacobsen 1979:151

    b.   **ga**-dámal-i
             3/3UN-hear-IND
             'She hears it.'   Jacobsen 1996:16

Thus, if the paraphrase in (54) were correct for Washo (53), we would expect the agreement prefix on *mušéʔeš* to be overt and not null, contrary to fact.

To summarize, a number of properties of switch-reference clauses in Washo militate against a coordination-based analysis, which can be seen as further support for an agreement-based account.

---

[24]Object drop has an effect on the agreement prefix only when the subject is third person. See Douros 2019 for a more complete description, as well as an analysis.

5 Overlapping reference and alternative analyses

In previous sections, we have focused largely on Agree-based analyses of switch reference (McKenzie 2012, Arregi & Hanink 2018, Baker & Camargo Souza 2019, Clem 2019). The aim of this section is to rule out possible alternative analyses that have been proposed to account for switch reference, particularly those based on binding (Finer 1985, Watanabe 2000) and control (Georgi 2012). We show in particular that such accounts face problems from data involving overlapping reference, which we now turn to.

Overlapping reference refers to cases in which the referents of the two subjects tracked by switch reference overlap (either because one or both are plural). In the examples below, we focus on the specific case in which the referent of a singular subject is a proper subset of the referent in a plural subject. Languages vary according to the way in which switch reference is marked in such cases (see McKenzie 2015:427 and Roberts 2017:553–558), but overlapping reference in Washo leads to optionality in the form of the switch reference marker.[25] The examples below illustrate this with clausal nominalizations, in the specific case in which the referent of the embedded subject is a subset of the referent of the matrix subject:

(57)   a.   [**Adele**$_i$ ga-sú:biʔ-i-**š**-ge   ] **lé:-ši**$_{i,j}$ gó:beʔ l-é:meʔ-i
           [**Adele**$_i$ 3/3UN-bring-IND-**DS**-NM.ACC] **1.PRO-DU**$_{i,j}$ coffee 1/3-drink-IND
           'We (=Adele and I) are drinking the coffee Adele brought.'

   b.   **lé:-ši**$_{i,j}$ gó:beʔ l-é:meʔ-i   [**Adele**$_i$ ga-sú:biʔ-i-**Ø**-ge   ]
           1.PRO-DU$_{i,j}$ coffee 1/3-drink-IND [**Adele**$_i$ 3/3UN-bring-IND-**SS**-NM.ACC]
           'We (=Adele and I) are drinking the coffee Adele brought.'

Both the DS (57a) and SS (57b) markers are available in this context. The following examples illustrate this optionality with temporal adjuncts:[26]

(58)   a.   *Embedded Sbj ⊂ Matrix Sbj*
           [**Emily** gé:gel-aʔ-{**š/Ø**}] **Adele ida Emily** wagayáy-i
           [**Emily** 3.sit-{**DS, SS**}   ] **Adele and Emily** 3.talk-IND
           'Adele and Emily are talking while Emily is sitting.'

---

[25]These facts were noticed to some extent by Jacobsen (1967:244) and in more detail by Finer (1984) (material in brackets our own): "The generalization here in Washo appears to be that DS is [obligatorily] present only when the subjects of two hierarchially adjacent clauses are disjoint in reference (refer to sets that have no members in common)" Finer 1984:88.

[26]The mood marker -*aʔ* becomes -*a* before *š*, see fn. 18.

b. *Matrix Sbj ⊂ Embedded Sbj*

[**Adele ida Emily** wagayáy-aʔ-{**š,Ø**}   ] **Emily** bašáʔ-i

[**Adele and emily** 3.talk-DEP-{**DS, SS**}] **Emily** 3.write-IND

'Emily is writing while Adele and Emily are talking.'

These additionally show that the direction of the subset relation does not matter in the choice of switch reference morpheme.

5.1   Reference overlap in an Agree-based account

Our proposal does not extend immediately to cases of overlapping reference. Specifically, the proposed vocabulary entries deriving switch reference morphology are in (59), repeated here:

(59)   *Vocabulary entries for C*

a. $[_\text{C}\ \text{ID}{:}i,\ \text{ID}{:}j\,] \to$ š   (where $i \neq j$)   DS

b. $[_\text{C}\ ] \to \varnothing$ SS

This set of vocabulary entries incorrectly predicts DS in all cases of overlapping reference, under the assumption that a plural-denoting nominal has a single referential index.

In our view, there are two ways to extend the analysis to account for cases in which the referent of a nominal contains more than one individual. The first is to adopt the proposal that the value of [ID] in plural DPs has one index for each individual in its referent (Sportiche 1985), as well as the assumption that agreeing C in Washo may copy *exactly one index* from [ID] on each nominative DP it agrees with. This predicts optionality the following way. In case the two copied indices happen to match, SS will be inserted:

(60)   *Copy **same index** from plural DP as singular DP*
$\big[$ DP[ID:i] … C[ID:i,i] $\big]$ DP[ID:**i**,j]
                        SS

In case the 'wrong' (i.e., disjoint) index is copied (62), DS will be inserted:

(61)   *Copy **different index** from plural DP as singular DP*
$\big[$ DP[ID:i] … C[ID:i,j] $\big]$ DP[ID:i,**j**]
                        DS

This approach thus accounts for the optionality of DS/SS in a language like Washo.

As noted above, however, there is variation in the choice of morpheme in cases of overlapping reference, as many languages have obligatory DS in overlapping contexts. In order to capture this variation, we could propose the following parameter:

(62)　ID-*Probe Parameter*
　　　Agree copies *all/exactly one* index in the value of [ID] in the Goal.

In a nutshell, while agreement in Washo must copy one index in the Goal, agreement in languages in which DS is obligatory must copy *all* indices. If this is the case, there is no way to derive SS in overlapping contexts, as at least one of the indices copied from the plural nominal is the same as the one copied from the singular nominal:

(63)　*Copy **all indices** from plural DP*
　　　$\left[\text{DP[ID:i]} \ldots \text{C[ID:i,i,j]} \right] \text{DP[ID:\textbf{i,j}]}$
　　　　　　　　　　DS

There is preliminary evidence that this type of approach makes the correct prediction (at least for languages of North America, as surveyed in McKenzie 2015:427): In cases of overlapping reference, there is no language that exhibits obligatory SS marking. That is, the morpheme in such cases can either be optionally DS/SS, or obligatorily DS. The generalization is however more complex. First, obligatory SS languages are unattested in McKenzie's survey, but this may be due to an absence of relevant data. Second, obligatory SS languages are claimed to exist in Papua-New Guinea (Roberts 2017:553–558). We note regarding the second point however, that the reported paradigms are not exhaustive, or the claim is not supported by negative evidence (e.g. Bruce 1984 for Alamblak, Roberts 1987:292–297 for Amele.) Additionally, person and number are often relevant, suggesting an analysis in which the probe copies features other than [ID], with potentially complex consequences for exponence (see also Valenzuela 2003:429–434 for Shipibo).

The second option to extend our proposal to overlapping reference is to propose different entries for vocabulary insertion. On this approach, the value of [ID] is a set that contains a different index for every individual in its referent. Agree copies the index sets from both subjects, and the vocabulary entries do all the work of mapping different types of set-theoretic relations between these sets to exponence:

(64)　*Alternative vocabulary entries for C*
　　　a.　$\left[_C \text{ ID:x, ID:y} \right] \to \text{š}$ (where $x \neq y$)
　　　b.　$\left[_C \text{ ID:x, ID:y} \right] \to \text{Ø}$ (where $x \cap y \neq \emptyset$)

In cases of overlapping reference, the two sets are distinct, but they also have a non-null intersection (i.e. they overlap), so that either exponent can be inserted in C.

The cross-linguistic predictions here are rather different from those arising from the ID-Probe Parameter. Most notably, entries such as those in (64) do not make any principled restrictions on the obligatoriness vs. optionality of SS-marking in overlapping contexts, as the elsewhere option could be specified language-specifically either as in (65b), resulting in obligatory DS, or as in (66b), resulting in obligatory SS.

(65)   *Obligatory DS*

    a. $[_C \text{ ID:x, ID:y }] \rightarrow \text{DS } (x \neq y)$

    b. $[_C \quad] \rightarrow \text{SS}$

(66)   *Obligatory SS*

    a. $[_C \text{ ID:x, ID:y }] \rightarrow \text{SS } (x \cap y \neq \emptyset)$

    b. $[_C \quad] \rightarrow \text{DS}$

This option therefore faces the possible problem of overgeneration. Any permutation of behaviors in overlapping reference should be allowed, and it is an open empirical question whether any language has obligatory SS-making in overlapping reference contexts.

5.2   Switch reference as binding

In a similar account that ours is based on, Finer (1984, 1985) and Watanabe 2000 claim that while the dependency established with the embedded subject is agreement, the one with the superordinate subject is binding in the sense of Chomsky (1981) (though, from an Ā-position, see Aoun 1981). That is, embedded C enters two dependencies. First, it acquires the referential index of the embedded subject via agreement. Second, C is itself either a reflexive (when surfacing as SS), or a pronoun (when surfacing as DS):

(67)   *Switch reference as binding*
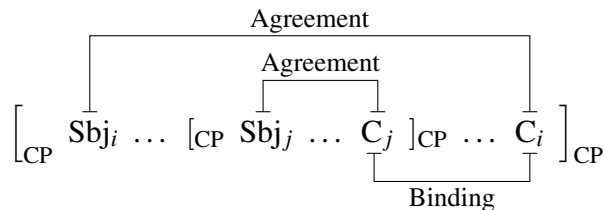
Conditions A and B of Binding Theory ensure that SS only surfaces when C is bound by the higher subject, and DS when it is free.

Although this captures some of the properties of Washo switch reference, there are several issues for this approach.[27] First, switch reference makes no detectable contribution to meaning. An Agree-based analysis captures this, under the standard assumption that features in agreement targets (probes) are not interpreted semantically, but a Binding-Theoretic account must stipulate the existence of semantically vacuous reflexives and pronouns (indeed, neither Finer (1985) nor Watanabe (2000) provide a semantics to their posited reflexives and pronouns).

Second, McKenzie (2012:95–96) points out that a binding-theoretic analysis predicts that matrix C should always be realized as DS, since there is no higher C that can bind it. This is contrary to fact: Matrix clauses systematically lack the DS marker -š in Washo, which can be interpreted as either absence of switch reference altogether, or presence of the null SS marker, but not as DS marking. The Agree-based analysis proposed here captures this fact: in the absence of a higher subject, only the matrix subject's index is copied onto matrix C, which is realized as the zero, elsewhere form (we note also that the SS morpheme is not null in all languages).

Third, the binding approach makes the prediction that DS and SS marking should have the same distribution as anaphors and pronouns in overlap contexts, which is not borne out. Recall that both DS and SS are possible when the referent of one of the subjects is a subset of the referent of the other (examples repeated from (57)):

(68)　a.　[**Adele**$_i$ ga-sú:biʔ-i-**š**-ge 　　　　　] **lé:-ši**$_{i,j}$ 　gó:beʔ l-é:meʔ-i
　　　　　[**Adele**$_i$ 3/3UN-bring-IND-**DS**-NM.ACC] **1.PRO-DU**$_{i,j}$ coffee 1/3-drink-IND
　　　　　'We (=Adele and I) are drinking the coffee Adele brought.'

　　　b.　**lé:-ši**$_{i,j}$ 　　gó:beʔ l-é:meʔ-i 　[**Adele**$_i$ ga-sú:biʔ-i-**Ø**-ge 　　　　　]
　　　　　1.PRO-DU$_{i,j}$ coffee 1/3-drink-IND [**Adele**$_i$ 3/3UN-bring-IND-**SS**-NM.ACC]
　　　　　'We (=Adele and I) are drinking the coffee Adele brought.'

Given the parallel posited between DS and pronouns on the one hand, and between SS and reflexives on the other, the binding-theoretic analysis of switch reference predicts that both pronouns and anaphors should be possible in overlap contexts in Washo, contrary to fact. In particular, Rooryck (2006) reports that, in cases of referential overlap, pronouns are possible in a monoclausal context

---

[27]We also note that Finer's analysis would have to be amended to capture subject orientation. That is, as a reflexive, SS would have to be a local subject-oriented reflexive (i.a. Ahn 2015; see Diercks 2013 for a related analysis of complementizer agreement in Lubukusu), and, as a pronoun, DS would have to be anti-subject oriented (Vikner 1985, Hestvik 1992).

in English and other languages (see also Postal 1966:91, Postal 1969, Chomsky 1973, and Lasnik 1981 for relevant discussion):

(69)   I$_i$ saved us$_{i,j}$.

However, reflexives are ruled out:

(70)   *I$_i$ saved ourselves$_{i,j}$.

The same judgements hold for Washo. Washo lacks a *self* anaphor, but does have an invariant reflexive prefix, realized as *gum-*:

(71)   tá?wi-lu   di-**gum**-yá:k'ɨm-i l-á:du-ya   ?ida di-yáha-yeti?-i
         knife-INST 1-REFL-cut-IND   1.POSS-hand-OBL and 1-hurt-INCH-IND
         'I cut myself on the hand with a knife, and I began to hurt.'   Washo Archive

(72)   da?mó?mo? **gum**-yá:k'ɨm-i
         woman   3.REFL-cut-IND
         'The woman cut herself.'   Washo Archive

Here, Washo displays the same behavior with respect to overlap in the pronominal domain as does English:

(73)   lé: lé-w   di-k'éše-ha-yi
         1.PRO 1.PRO-PL 1/1-be.alive-CAUS-IND
         'I saved us (all).'

(74)   *lé: lé-w   di-**gum**-k'éše-ha-yi
         1.PRO 1.PRO-PL 1-REFL-be.alive-CAUS-IND
         Intended: 'I saved us (all).'

In an overlapping context, a pronoun is grammatical in object position (73), while its reflexive counterpart is not (74). This contrasts with the behavior of switch-rereference markers, as shown above.

   Relatedly, Rooryck (2006) also shows that in English and other languages, a subject can cooccur with a pronoun object with overlapping reference if and only if the *lower* argument (the object) constitutes the superset DP:

(75)   a.   I$_i$ saved us$_{i,j}$.

b. *We$_{i,j}$ saved me$_i$.

This behavior is again repeated in Washo. Example (73), in which the superset nominal is the object, is grammatical, while the following examples, in which the superset nominal is the subject, is not (regardless of whether the verb is reflexive):

(76)   *lé-w   lé: di-k'éše-ha-yi

           1.PRO-PL 1.PRO 1/1-be.alive-CAUS-IND

           Intended: 'We saved me.'   *Obj ⊂ Subj*

This directional asymmetry is not what we see in the case of switch reference, which allows the subset relation to go in either direction (examples repeated from (58)):

(77)   a.   *Embedded Sbj ⊂ Matrix Sbj*

               [**Emily** gé:gel-aʔ-{**š/Ø**}   ] **Adele ida Emily** wagayáy-i

               [**Emily** 3.sit-DEP-{**DS/SS**}   **Adele and Emily** 3.talk-IND

               'Adele and Emily are talking while Emily is sitting.'

    b.   *Matrix Sbj ⊂ Embedded Sbj*

               [**Adele ida Emily** wagayáy-aʔ-{**š/Ø**}   ] **Emily** bašáʔ-i

               [**Adele and emily** 3.talk-DEP-{**DS/SS**}] **Emily** 3.write-IND

               'Emily is writing while Adele and Emily are talking.'

In summary, the binding-theoretic approach to switch reference predicts parallel behavior between this phenomenon and the reflexive and pronominal system in cases of reference overlap, contrary to what the data show.

    We note here that Finer (1984:86–129) is aware of the problem posed by cases of overlap and offers a proposal couched in an approach that he calls 'diagonal binding'. The core idea behind diagonal binding is that the subscripted index of one NP may occur as a superscript on another, and that the interpretation of this indexing is that the denotation of one NP overlaps that of another NP. To account for the variation in the way that different languages treat overlapping reference, Finer proposes further that the availability of diagonal binding varies cross-linguistically. While we do not go into his account in any detail here, we point out that his account faces the same problem as any binding approach: It predicts that in cases of overlapping reference, switch reference will behave the same as reflexives and pronouns in the ways discussed above, which is not borne out.

5.3   Switch reference as control

Aside from the types of analyses discussed so far in this paper, same-subject marking in switch reference has been treated by Georgi (2012) as an instance of (obligatory) control in the sense of Chomsky (1981). Adopting in particular the movement theory of control (Hornstein 1999, Boeckx, Hornstein, & Nunes 2010), Georgi proposes that SS involves movement of the embedded subject to the matrix clause. The morphological realizations for switch reference are exponents of T, and are sensitive to whether this movement has taken place or not.

On the movement theory of control, a DP subject is base-merged in the embedded clause and then moved to an argumental position in the matrix clause:

(78)   Jane$_i$ tried [~~Jane$_i$~~ to leave].

Movement of the lower subject to the matrix clause is possible because the DP is still active: It does not receive case from T, which is defective in infinitives.

In treating same-subject marking as obligatory control, Georgi argues that it involves a single argument, generated in the embedded position before undergoing movement to the superordinate argument position. T in the lower clause is sensitive to the lack of an overt DP in its specifier, and spells out as SS. If no movement has taken place on the other hand, that is, if a subject is present in the embedded clause, DS is inserted. Georgi argues in particular that the switch-reference marker realizes a head T:

(79)   a.   which is c-commanded by a head α that is *not* the root node and that is the closest c-commander for T, and

         b.   in whose accessible domain there is a DP.   Georgi 2012:21

In (79), the ban on a c-commanding root note is to rule out DS-marking in matrix clauses. The rules for vocabulary insertion on T are then as follows:

(80)   *Vocabulary entries for T in Georgi 2012:22*

         a.   /X/ $\leftrightarrow$ T/[$\alpha_{[-root]}$[__ ... DP]]   DS
         b.   /X/ $\leftrightarrow$ T/[$\alpha_{[-root]}$[__]]   SS

Crucially, the assimilation of same-subject marking to obligatory control requires the assumption that T in SS clauses is *always* defective. For the languages Georgi looks at (e.g. Quechua), this is the case: Overt subjects disallowed in embedded clause, and embedded tense marking is prohib-

ited. The following illustrate the SS and DS clauses in Quechua, in which both of these conditions hold:

(81)   *Switch reference in Ancash Quechua*

    a.   [chakra-chaw urya-**shpa**] pallamu-rqu-u   wayta-kuna-ta

         [field-in   work-**SS**] pick-REC.PST-1 flower-PL-ACC

         'While I worked in the field, I picked flowers.'   Cole 1983:3

    b.   [chakra-chaw urya-**pti**-i] Maria palluma-rqu-n   wayta-kuna-ta

         [field-in   work-**DS**-1] Maria pick-REC.PST-3 flower-PL-ACC

         'While I worked in the field, Maria picked flowers.'   Cole 1983:3

Adopting this particular analysis for Washo faces several problems (see Clem 2018 for similar arguments based on Amahuaca).

First, T is not defective in SS-marked clauses in Washo, as they have independent tense morphology (see Subsection 4.1). Second, as illustrated, among other examples, in (77), the subject may be overt in the SS-marked clause.

Crucially moreover, the behavior of overlapping reference make a control-based proposal untenable for Washo. Adopting a control-based account of switch reference leads to the prediction that cases of overlap in switch reference should behave the same as *partial* control. Cases of partial control are exemplified in the following, in which the matrix controller is a subset of embedded PRO (enforced by the presence of items in the embedded clause that force a semantically plural subject):

(82)   a.   Mary wanted to assemble in the hall.

        b.   Sue expected to go on vacation together.

One important characteristic to show why switch reference does not display the same behavior is the fact that partial control is unidirectional, and is not possible if the referent of PRO is a subset of the referent of the controller:

(83)   *Sue and John expected to go on vacation by herself.

In this example, the anaphor *by herself* ensures that the PRO subject is feminine and singular, thus forcing a reading in which it refers to Sue, who is a member of the referent of the matrix controller. This type of reverse partial control is not possible in Washo either:

(84) *Adele ida lé: gí:-k'eŋ   di-ló:š-gaʔlám-i
      Adele and 1.PRO 3.PRO-alone 1-dance-want-IND
      Intended: 'Adele and I want (Adele) to dance by herself.'

Again here, this is different from the pattern that we find in switch reference: SS (and DS) in Washo is bidirectional, as was shown in (77). In sum, the pattern of overlapping reference in switch reference is distinct from observed patterns in control cross-linguistically, which constitutes our final argument against the control theory of switch reference.

6 Conclusion

To conclude, the data from Washo provide new insights as to the mechanisms of Agree involved in reference tracking. Through the investigation of these data, we hope to have established in this paper that switch reference is a syntactic phenomenon, and more narrowly, that it is the surface manifestation of multiple agreement. We have argued for our syntactic, agreement-based account based on the appearance of switch-reference morphology in different types of subordinate clauses, sensitivity to case, locality restrictions, and reference overlap.

Zooming out to the larger picture, our account makes interesting, testable predictions about possible cross-linguistic variation in the domain of switch reference, which we hope can be tackled in future work. First, Washo allows for switch reference in many different types of embedded clauses, a characteristic that appears to be rare across languages. One open question here concerns the cross-linguistic landscape of possible clause types able to host switch reference, and particularly coordination; it is unclear whether the present analysis can be extended to such configurations. While it has been claimed that languages exhibit switch reference in coordination, many apparent cases of this kind may simply be translations as such, and can possibly be re-analyzed as adverbials or otherwise. For instance, McKenzie (2012:167–169, 2015:433) claims that canonical switch reference that tracks arguments is not possible in coordination, at least in the languages of North America, but this claim has been disputed by Keine (2013).

Second, the proposal that C in Washo probes for nominative arguments only leads to the prediction that the sensitivity of switch reference to case should be governed by Bobaljik's (2008) case hierarchy (unmarked > dependent > lexical/oblique), which constrains which case types are accessible to agreement by specific agreement controllers (e.g. a controller may only access arguments with unmarked case, or arguments with either unmarked or dependent case, but it may not access only arguments with dependent case). In a language with accusative case alignment, a probe restricted to unmarked case (=nominative) tracks transitive and intransitive subjects exclu-

sively, as is the case in Washo. An interesting prediction is that a similarly restricted probe in a language with ergative case alignment will be restricted to absolutive arguments, that is, subjects in intransitive sentences and objects in transitive sentences. Although switch reference is attested in ergative languages, the best studied cases are in the Panoan family, in which switch reference is not restricted by case or grammatical function (Baker & Camargo Souza 2019, Clem 2019). Whether our prediction is verified or not will require further detailed work into ergative languages with switch reference.

Finally, an agreement analysis predicts that goal features other than the index may be valued on the probe. This is not the case in Washo, but switch reference morphology often also encodes the case of the tracked arguments in other languages. More specifically Clem (2019) argues the Agree probe in Amahuaca switch reference values case features in addition to the index feature (but see Baker & Camargo Souza 2019 for a dissenting view based on other Panoan languages). In addition, person and number features seem to have an effect indirectly in the distribution of same vs. different subject inflection in cases of reference overlap, as discussed in Roberts 2017:552–558.

References

Adger, David. 2003. *Core syntax: A minimalist approach*. Oxford: Oxford University Press.

Ahn, Byron. 2015. Giving reflexivity a voice. Doctoral dissertation, University of California, Los Angeles.

Aoun, Joseph. 1981. The Formal Nature of Anaphoric Relations. Doctoral dissertation, Massachusetts Institute of Technology, Cambridge, MA.

Arregi, Karlos, & Emily A. Hanink. 2018. Switch Reference in Washo as multiple subject agreement. In *Proceedings of the North East Linguistic Society 48*, ed. Sherry Hucklebridge & Max Nelson, volume 1, 39–48. GLSA Publications.

Baker, Mark. 2008. *The syntax of agreement and concord*. Cambridge: Cambridge University Press.

Baker, Mark, & Livia Camargo Souza. 2019. Agree without Agreement: Switch-Reference and Reflexive Voice in Two Panoan Languages. Ms., Rutgers University.

Béjar, Susana, & Milan Rezac. 2009. Cyclic Agree. *Linguistic Inquiry* 40:35–73.

Bhatt, Rajesh. 2005. Long distance agreement in Hindi-Urdu. *Natural Language and Linguistic Theory* 23:757–807.

Bjorkman, Bronwyn. 2011. BE-ing default: The morphosyntax of auxiliaries. Doctoral dissertation, MIT, Cambridge, MA.

Bjorkman, Bronwyn, & Hedde Zeijlstra. 2019. Checking Up on (ϕ-)Agree. *Linguistic Inquiry* 50.3:527–629.

Bobaljik, Jonathan. 2008. Where's phi? Agreement as a post-syntactic operation. In *Phi theory: Phi features across modules and interfaces*, ed. Daniel Harbour David Adger & Susana Béjar, 295–328. Oxford: Oxford University Press.

Bochnak, M. Ryan. 2015. Variable force modality in Washo. In *North East Linguistic Society (NELS) 45, Volume 1*, ed. Thuy Bui & Deniz Özyıldız, 105–114. Amherst: University of Massachusetts, GLSA Publications.

Bochnak, M. Ryan. 2016. Past time reference in a language with optional tense. *Linguistics and Philosophy* 39:247–294.

Bochnak, M. Ryan, & Emily A. Hanink. 2019. Clausal embedding in Washo: Complementation vs. modification. Ms., The University of Manchester.

Boeckx, Cedric, Norbert Hornstein, & Jairo Nunes. 2010. *Control as movement*. New York: Cambridge University Press.

Bošković, Željko. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59:1–45.

Bošković, Željko. 2008. What will you have, DP or NP? In *Proceedings of NELS 37*, ed. E. Elfner & M. Wallow, volume 1, 101–114. Amherst, MA: GLSA Publications.

Bošković, Željko. 2013. Phases beyond clauses. In *Nominal constructions in slavic and beyond*, ed. L. Schürcks, A. Giannakidou, U. Etxeberria, & P. Kosta, 75–128. Berlin: de Gruyter.

Bošković, Željko. 2015. From the complex NP constraint to everything: On deep extractions across categories. *The Linguistic Review* 603–669.

Broadwell, Aaron. 2006. *A Choctaw reference grammar*. Lincoln, NB: University of Nebraska Press.

Bruce, Les P. 1984. *The Alamblak language of Papua New Guinea (East Sepik)*. Canberra: Pacific Linguistics.

Camacho, José. 2010. On case concord: The syntax of switch-reference clauses. *Natural Language and Linguistic Theory* 28:239–274.

Campbell, Lyle. 1997. *American Indian Languages: The Historical Linguistics of Native America*. Oxford University Press.

Carstens, Vicki. 2016. Delayed valuation: A reanalysis of goal features, "upward" complementizer agreement, and the mechanics of case. *Syntax* 19:1–42.

Chomsky, Noam. 1973. Conditions on transformations. In *A Festschrift for Morris Halle*, ed. Stephen Anserson & Paul Kiparsky, 232–286. New York: Holt, Rinehart & Winston.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Foris.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on Minimalist syntax in honor of Howard Lasnik*, ed. Roger Martin, David Michaels, & Juan Uriagereka, 89–155. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A Life in Language*, ed. M. Kenstowicz, 1–52. MIT Press.

Clem, Emily. 2018. Against non-reference-tracking theories of switch-reference. In *Proceedings of the Linguistic Society of America 3*, ed. Patrick Farrell, 29:1–9. Washington, DC: Linguistic Society of America.

Clem, Emily. 2019. Cyclic expansion in Agree: Maximal projections as probes. Ms., University of California, Berkeley.

Cole, Peter. 1983. Switch-reference in two Quechua languages. In *Switch-reference and Universal Grammar*, ed. John Haiman & Pamela Munro, 1–15. Amsterdam: John Benjamins.

Dahlstrom, Amy. 1982. A functional analysis of switch-reference in Lakhota discourse. In *Chicago Linguistic Society (CLS) 18*, ed. Kevin Tuite, Robinson Schneider, & Robert Chametsky, 72–81. University of Chicago, Chicago Linguistic Society.

Deal, Amy Rose. 2015. Interaction and satisfaction in ϕ-agreement. In *The Proceedings of the Forty-Fifth Annual Meeting of the North East Linguistic Society*, ed. Thuy Bui & Deniz Özyıldız, volume 1, 179–192. Amherst, Ma: GLSA.

Deal, Amy Rose. 2017. Towards an etiology of outer indices. In *A schrift to fest Kyle Johnson*, ed. Keir Moulton Nicholas LaCara & Anne-Michelle Tessier, 107–117. Linguistics Open Access Publications.

Diercks, Michael. 2013. Indirect agree in Lubukusu complementizer agreement. *Natural Language and Linguistic Theory* 31.2:357–407.

Douros, Darby. 2019. Person marking in Washo as agreement with clitic movement. BA thesis, The University of Chicago.

Finer, Daniel. 1984. The formal grammar of switch-reference. Doctoral dissertation, UMass Amherst.

Finer, Daniel. 1985. The syntax of switch-reference. *Linguistic Inquiry* 16:35–55.

Georgi, Doreen. 2012. Switch-Reference by Movement. In *Perspectives on switch-reference: Local modeling and empirical distribution*, ed. Philipp Weisser, 1–40. Linguistische Arbeitsberichte, Universität Leipzig.

Grosz, Patrick. 2015. Movement and agreement in Right-Node Raising constructions. *Syntax* 18:1–38.

Hanink, Emily. 2016. Internally headed relatives and event nominalizations in Washo. In *Berkeley Linguistics Society (BLS) 42*, ed. Emily Clem, Virginia Dawson, Alice Shen, Amalia Skilton, Geoff Bacon, Andrew Cheng, & Erik Maier, 119–134. Berkeley: University of California, Berkeley Linguistics Society.

Hanink, Emily. 2019. DP Structure and internally headed relatives in Washo. Ms., The University of Manchester.

Hanink, Emily, & M. Ryan Bochnak. 2018. Factivity and two types of embedded clauses in Washo. In *North East Linguistic Society (NELS) 47, Volume 2*, ed. Andrew Lamont & Katerina Tetzloff, 65–78. Amherst: University of Massachusetts, GLSA Publications.

Harbour, Daniel. 2007. *Morphosemantic number: From Kiowa noun classes to UG number features*. Dordrecht: Springer.

Harbour, Daniel. 2011. Valence and atomic number. *Linguistic Inquiry* 42:561–594.

Heim, Irene, & Angelika Kratzer. 1998. *Semantics in Generative Grammar*. Malden, MA: Blackwell.

Hestvik, Arild. 1992. LF movement of pronouns and antisubject orientation. *Linguistic Inquiry* 23:557–594.

Hicks, Glyn. 2009. *The derivation of anaphoric relations*. John Benjamins.

Hiraiwa, Ken. 2000. Agree and closeness in multiple specifiers. Manuscript, Massachusetts Institute of Technology.

Hiraiwa, Ken. 2001. Multiple Agree and the Defective Intervention Constraint in Japanese. In *HUMIT Student Conference in Language Research (HUMIT) 1*, ed. Ora Matushansky, Ken Hiraiwa, Albert Costa, Javier Martín-González, Lance Nathan, & Adam Szczegielniak, 67–80.

MIT Working Papers in Linguistics 40. Cambridge, MA: MIT, MIT Working Papers in Linguistics.

Hornstein, Norbert. 1999. Movement and control. *Linguistic Inquiry* 30:69–96.

Jacobsen, William. 1964. A grammar of the Washo language. Doctoral dissertation, University of California, Berkeley.

Jacobsen, William. 1967. Switch-reference in Hokan-Coahuiltecan. In *Studies in Southwestern linguistics*, ed. Dell Hymes & William Bittle, 238–263. The Hague: Mouton.

Jacobsen, William. 1979. Why does Washo lack a passive? In *Ergativity: Towards a theory of grammatical relations*, ed. F. Plank, 145–160. London: Academic Press.

Jacobsen, William. 1996. *Beginning Washo*. Carson City, NV: Nevada State Museum.

Jacobsen, William. 1998. Headless relative clauses in Washo. In *Studies in American Indian languages: Description and theory*, ed. Leanne Hilton & Pamela Munro, 102–116. Berkeley, CA: University of California Press.

Keine, Stefan. 2013. Deconstructing switch-reference. *Natural Language and Linguistic Theory* 31:767–826.

Kennedy, Chris. 2014. Predicates *and* formulas: Evidence from ellipsis. In *The art and craft of semantics: A Festschrift for Irene Heim, Volume 1*, ed. Luka Crnič & Uli Sauerland, 83–136. Cambrdige, MA: MIT, MIT Working Papers in Linguistics.

van Koppen, Johanna Maria. 2005. One probe – two goals: Aspects of agreement in Dutch dialects. Doctoral dissertation, Leiden University.

Kratzer, Angelika. 2009. Making a pronoun: Fake indexicals as windows into the properties of pronouns. *Linguistic Inquiry* 40.2:187–237.

Lasnik, Howard. 1981. On two recent treatments of disjoint reference. *Journal of Linguistic Research* 1:48–58.

Lee-Schoenfeld, Vera. 2008. Binding, Phases, and Locality. *Syntax* 11.3:281–298.

McCloskey, Jim. 1997. Subjecthood and subject positions. In *Elements of grammar*, 197–235. Springer Netherlands.

McKenzie, Andrew. 2012. The role of contextual restriction in reference-tracking. Doctoral dissertation, University of Massachusetts, Amherst.

McKenzie, Andrew. 2015. A survey of switch-reference in North America. *International Journal of American Linguistics* 81:409–448.

Merchant, Jason. 2006. Polyvalent case, geometric hierarchies, and split ergativity. In *Proceedings from the Annual Meeting of the Chicago Linguistic Society*, ed. Jackie Bunting, Sapna Desai, Robert Peachey, Chris Straughn, & Zuzana Tomkova, volume 2: The Parasessions, 47–67. Chicago Linguistic Society.

Merchant, Jason. 2011. Aleut case matters. In *Pragmatics and Autolexical Grammar: In honor of Jerry Sadock*, 382–411. John Benjamins: Amsterdam.

Mithun, Marianne. 1999. *The Languages of North America*. Cambridge University Press.

Nevins, Andrew. 2007. The representation of third person and its consequences for person-case effects. *Natural Language and Linguistic Theory* 25:273–313.

Nevins, Andrew. 2011. Multiple agree with clitics: person complementarity vs. omnivorous number. *Natural Language and Linguistic Theory* 29:939–971.

Peachey, Robert M. 2006. On switch-reference and the internally-headed relative construction in Washo. Ms., University of Chicago.

Postal, Paul. 1966. A note on 'understood transitively'. *International Journal of American Linguistics* 32:90–93.

Postal, Paul. 1969. Review of A. McIntosh and M.A.K. Halliday, Patterns of language: Papers in general descriptive and applied linguistics. *Foundations of Language* 5:409–439.

Preminger, Omer. 2014. *Agreement and its failures*, volume 68. MIT Press.

Rezac, Milan. 2004. Agree and Merge: Locality in copy-raising. In *Journées d'Études Linguistiques (JEL) 2004*, ed. Olivier Crouzet, Hamida Demirdache, & Sophie Wauquier-Gravelines, 205–210. University of Nantes, Department of Humanities and Languages.

Roberts, John R. 1987. *Amele*. London: Croon Helm.

Roberts, John R. 2017. A typology of switch reference. In *The Cambridge Handbook of Linguistic Typology*, ed. Alexandra Y. Aikhenwald & R.M.W. Dixon, 538–573. Oxford: Cambridge University Press.

Rooryck, Johan. 2006. Binding into pronouns. *Lingua* 116.10:1561–1579.

Sportiche, Dominique. 1985. Remarks on crossover. *Linguistic Inquiry* 16:460–469.

Stirling, Lesley. 1993. *Switch-reference and discourse representation*. Cambridge: Cambridge University Press.

Svenonius, Peter. 2004. On the edge. In *Peripheries: Syntactic edges and their effects*, ed. David Adger et al., 259–287. Dordrecht: Kluwer.

Valenzuela, Pilar. 2003. Transitivity in Shipibo-Konibo Grammar. Doctoral dissertation, University of Oregon.

Vikner, Sten. 1985. Parameters of binder and of binding category in Danish. *Working Papers in Scandinavian Syntax* 23:1–61.

Watanabe, Akira. 2000. Feature copying and binding: Evidence from complementizer agreement and switch reference. *Syntax* 3:159–181.

Wurmbrand, Susi. 2012. Parasitic participles: Evidence for the theory of verb clusters. *Taal en Tongval* 64:129–156.

Yu, Alan. 2005. Quantity, stress, and reduplication in Washo. *Phonology* 22(3):437–475.

Zeijlstra, Hedde. 2004. Sentential Negation and Negative Concord. Doctoral dissertation, University of Amsterdam.