Chapter 7: Switch-reference in and out of complement clauses

1. Introduction

As mentioned in Chapter 1—and not since—switch-reference (SR) is a phenomenon found in many languages of Western North America, Australia, and New Guinea, as well as in South American languages from several families. In SR systems, an embedded clause shows one kind of morphological marking (same subject, SS) if its subject is coreferential with the subject of the immediately superordinate clause, and a contrasting kind of morphological marking (different subject, DS) if its subject is not coreferential with the subject of the superordinate clause.[1] (1) gives a minimal pair that involves a complement clause in the Muskogean language Choctaw (Broadwell 2006). When the subject of the complement clause refers to the same individual as the subject of the main clause, as in (1a), the outermost suffix on the embedded verb is the SS suffix *-t*. When the subject of the complement clause refers to someone other than the person referred to by the subject of the main clause, as in (1b), the embedded verb bears the DS suffix *-N* (realized as nasalization on the vowel).

(1) Choctaw (Broadwell 2006: 264)
*a. [Pisachokma-ka-**t**] ikhána-h.*
handsome-C-SS know-TNS
"He$_i$ knows that he$_i$ is handsome."

[1] More accurately, one should say that SR marking shows whether the subject of the embedded clause is referentially dependent on the subject of the matrix clause, since nonreferential DPs such as quantifiers can participate in SR on a par with referential ones. See McKenzie (2012) and Camargo Souza (2020: ch 5) for some discussion.

b. [Pisachokma-ka-N] ikhána-h.
handsome-C-DS know-TNS
"He$_i$ knows that he$_k$ is handsome."

For overviews of this phenomenon from different perspectives and eras, see (Haiman and Munro 1983, Finer 1984, Sterling 1993, McKenzie 2015, Baker and Camargo Souza 2020).

SS and DS marking generally show up as an outer affix on the embedded verb or as a particle following it, near the edge of the embedded clause. For example, in (1) *-t* and *-N* are the last suffixes on the embedded verbs, and they immediately follow the complementizing suffix *-ka*. As such, it is reasonable to say that SR markers are realizations of a head in the C-space. SR thus qualifies as "something weird that Cs do to relate to the NPs around them", fitting the informal characterization of the topic of this work. It is less obvious that it fits theoretically in being built out of a UG infrastructure that involves the control of a ghostly DP operator at the periphery of an embedded clause. Let us start by imagining clearly the possibility that it does, and what that amounts too.

Following a vein of recent work developed by several research teams independently, I assume that SR is fundamentally a manifestation of agreement. It involves multiple Agree on the part of a C-type head in the embedded clause (Baker and Camargo Souza 2020, Camargo Souza 2020, Arregi and Hanink 2022, Ikawa 2022, Clem 2023).[2] For concreteness, I adopt Ikawa's (2022) version. According to this theory, SS and DS are two distinct lexical items of the category C (more precisely, Fin; see below) with different lexical meanings, both of which have two NP/DP-seeking probe features. Because of these two probe features, the Cs enter into Agree with the closest DP probing downward and with the closest DP probing upward. These features also specify that C copies the referential indices of the DPs it

[2] It is no coincidence that Agree has been the UG mechanism of choice to handle SR in the current theoretical context. Agree is fundamentally a way of establishing a relationship between a functional head and one or more DPs in its environment. SR involves such a relationship, given the longstanding generative assumption that SS and DS realize a C like head. The difference is that in this case the relationships created by Agree involve coreference rather than the transfer of phi-features. This can be seen as a parameter in the working of the Agree operation in one of several ways explored in this literature.

finds, not their phi-features. The closest DP probing downward is generally the subject of the embedded clause; following McKenzie (2012), I call that DP the *pivot* of the SR construction. This downward Agree relationship is formally parallel to the downward complementizer agreement found in West Flemish and related Germanic languages. C also agrees upward with the matrix subject; again following McKenzie, I call that matrix clause DP the *antipivot* of the SR construction. The C thus ends up with two indices: one from each of the Agreed-with DPs. The lexical meaning of SS then says that the two indices refer to the same entity, whereas the lexical meaning of DS says that the two indices refer to different entities, according to Ikawa's version.[3]

The central question for this chapter is exactly how the upward Agree relationship involved in SR works. Descriptively, it finds the matrix subject, at least in simple examples like (1). Formally, this is parallel to the upward complementizer agreement in African languages, studied in Chapter 2. As in that literature, one can debate whether this Agree relationship is direct or indirect, mediated by a ghostly DP operator. Under the hypothesis that it is indirect, we can call the ghostly DP *SROp*, taking it to be parallel to the SoK that is involved in upward C-agreement for phi-features (as well as to Sp and lOp). SROp would then be controlled by the subject of the matrix clause, and it would be the immediate target of the second/upward Agree triggered by C. This would resolve any doubts we might have about whether C in the embedded clause is close enough to the matrix subject to enter into Agree with it. On this view, the examples in

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[3] See Ikawa (2022) for several other constructions in which a functional head with a substantive meaning finds its argument(s) by way of Agree, including object honorification in Japanese. The main advantage of using this view for SR, she claims, is that it allows one to assign different meanings to the SR heads to account for crosslinguistic variation in the treatment of overlap in reference when one or both of the tracked subjects is plural. This variation is a challenge for many theories of SR, including B&CS's (see B&CS 2020: xx for a remark). My main reason for adopting Ikawa's analysis rather than my own here is that it allows for a positive analysis of DS marking which is parallel to that of SS marking. In contrast, B&CS (and Clem 2023) treat DS as the default/elsewhere case, which shows up when SS marking cannot be used. There is excellent evidence that this is true in the Panoan languages, but it may not generalize to some of the other languages considered here. In particular, it will be convenient to have a positive account of DS in Washo which does not depend on blocking by SS forms.

(1a,b) have the syntactic representations in (2a,b).

(2) a. [pro_i T [$_{VP}$ know [SROp$_i$ C_{SS} [pro_k be.handsome]]]]

control Agree:[i,k]

C_{SS}(i,k)=i is the same entity as k

b. [pro_i T [$_{VP}$ know [SROp$_i$ C_{DS} [pro_k be.handsome]]]]

control Agree:[i,k]

C_{DS}(i,k)=i is a different entity from k

This is the version of an Agree-based theory of SR that does build on the same infrastructure as the other rarer constructions studied in this work. Antipivot selection is basically identical to how upward C-agreement works in the African languages; SR simply uses a different manifestation of Agree, one that copies index features rather than phi-features. The question before us in this chapter, then, is whether (2) is the right analysis of an SR construction like (1).

I argue that the answer is "sometimes yes, sometimes no", depending on the language and the specific construction. I start by showing that SR is not always mediated by a ghostly DP. In particular, it is not when SS and DS are marked on high adjunct clauses (§7.2), an environment in which SROp would fail to undergo OC. Rather, I show that C_{SR} agrees with the matrix subject directly in this type of SR. An empirical consequence of this is that the antipivot for adjunct SR is not determined by thematic roles, but purely structurally: it is whatever NP occupies the Spec TP position (§7.3). This provides a nice contrast with the ghostly DP constructions, where thematic roles are the key factor. The hypothesis that C agrees directly with the antipivot also explains nicely the fact that SR marking is possible on the complements of restructuring verbs but not on full CP complements in Shipibo, Yawanawa, and Washo (§7.4). This follows because full CPs have a phasal head that restructuring complements do not have and this blocks the direct Agree by the PIC. But then I circle back to languages like Choctaw, Hopi, and Imbabura Quechua, asking against this background why some languages do allow SR marking on complement clauses after all (§7.5). I claim that these are the languages that do allow structures like (2a,b), because C_{SS} and C_{DS} do license SROp in these languages. One important consequence of

this view is that it explains the fact that the subject of a triadic verb like ‘tell’ can be the antipivot for SR but the goal-object cannot be—a fact that previous generative theories have struggled to explain in full generality. Given (2), this receives the same control-theoretic explanation as why upward C-agreement is with the matrix subject not the object in Lubukusu, and why shifted indexicals and logophoric pronouns refer to the matrix subject and not the object in Magahi and Ibibio (§7.6). This analysis also predicts that SR in complement clauses will be determined by thematic roles more than by syntactic positions in other ways as well, but there is not much data that bears on this yet. I conclude (§7.7) that ghostly DP operators have a role to play in SR constructions in some languages but not others.

2. The distribution of SR marking

My road into this topic is considering the distribution of SR across clause types. We saw in (1) that Choctaw marks SS versus DS in complement clauses selected by verbs like ‘know’. However, we need to take into account the fact that Choctaw also marks SR on adjunct clauses of various kinds. (3) shows SR marking on purposive clauses (note that SS has the allomorph *-sh* after *-o*).

(3) Choctaw (Broadwell 2006: 288)

*a. [Palláska’ ikbi-l-aachi-h-oo-**sh**] bótta’ chopa-li-tok.*
bread make-1SG-IRR-TNS-PTCP-SS flour buy-1SG-PST
“I bought flour (in order) to make bread.”

*b. […Isht al-aachi-h-o-**N**] i-tishoh alhiihah-aN pit tilhiili-ttook.*
INS come-IRR-TNS-PTCP-DS POSS-servant group-ACC away send-DPST
“He sent his servants (in order) (for them) to bring them.”

This does not yet put SR beyond the bounds of the controlled-operator analysis in (2). I have claimed that purposive clauses across languages are VP-adjoined, making them contexts where OC takes place. As a result, upward C-agreement, indexical shift, and logophoricity licensing all take place in purposive clauses too.

However, SR in Choctaw is more widespread than this, in that TP-level adjuncts also show SR marking. This includes conditional

clauses, causal adjuncts, and temporal adjuncts, as seen in (4)-(6).[4]

(4) Choctaw (Broadwell 2006: 292)

*a. [Chi-hohchafo-hoo-**kma-t**], pállaska-kia ponaklo-h.*
2SG.ACC-hungry-LK-IRR-SS bread-too ask-TNS
"If you're hungry, (you) ask for bread."

*b. [Tiballichi-li-**kma-N**] am-anooli-h.*
err-1SG-IRR-DS 1SG.DAT-tell-TNS
"If I make a mistake, (you) tell me."

(5) Choctaw (Broadwell 2006: 263)

*a. [kaah sa-nna-**haatokoo-sh**], iskali' ittahobli-li-tok.*
car 1SG.ACC-want-because-SS money save-1SG-PST
"Because I wanted a car, I saved money."

*b. [kaah banna-**haatokoo-N**], iskali' ittahobli-li-tok.*
car want-because-DS money save-1SG-PST
"Because he wanted a car, I saved money."

(6) Choctaw (Broadwell 2006: 283)

*[Mihmat iskáli' oklah i-taha-h fókkaali-**hma-t**], alikchi-t iskáli' kaniimi ittahobbi-hma-t okla miti-ttook.*
and.when money PL 3.DAT-complete-TNS about-when-SS doctor-PTCP money some gather-when-SS PL come-DPST
"And when they$_i$ were about out of money, they$_i$ earned some money by doctoring, and came."

I have argued that these sorts of adjunct clauses are not contexts of obligatory control across languages. Indeed, several of the ghostly DP constructions considered in this work are not possible in these high adjunct clauses: indexicals cannot shift in such adjuncts in Magahi, logophoric pronouns are not licensed in such adjuncts in Ibibio, such adjuncts do not show upward complementizer agreement in Ibibio. SR in Choctaw is notably different from the other constructions investigated in this work in this respect.

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[4] I found no obvious DS analog of (6) with *-hma* in Broadwell (2006). Many temporal sequence examples use the suffixes *-cha* (SS) vs. *-na* (DS), but those have a different kind of morphology, without separate morphemes for C and SR.

Crosslinguistic comparison raises the stakes on this issue even higher. For example, the Shipibo language (Panoan, spoken in the Peruvian Amazon) also allows SR marking on high adjunct clauses, as in (7).

(7) Shipibo (Baker & Camargo Souza 2020)

*a. Jose=ra [(pro) Rosa oin-**ax]** xobo-n ka-ke.*
José=EV (he) Rosa.ABS see-SS.PFV.ABS house-LOC go-PFV
"When he$_i$ saw Rosa$_n$, José$_i$ went home."

*b. [Jose-kan Rosa oin-ke-**tian]**=ra, (ja) xobo-n ka-ke.*
José-ERG Rosa.ABS see-PFV-DS=EV 3SG home-LOC go-PFV
"When José$_i$ saw Rosa$_n$, he/she$_k$ went home."

These particular examples are translated as 'when' clauses, but they can be given a wide range of meanings, including as 'because' clauses, conditional clauses, absolutive clauses, and concessive clauses (Valenzuela 2003). Choctaw is thus not anomalous in allowing SR on high adjunct clauses. Shipibo also has SR marking on purposive adjuncts, as in (8).

(8) Shipibo (Valenzuela 2003: 423)

*a. E-a-ra ka-ai, [oa joni-bo osan-**no-x**].*
1-ABS-EV go-IPFV DIST person-PL.ABS laugh.at-FUT-SS
"I will go in order to laugh at those people."

*b. [Bake-shoko oxa-**no-n**] e-a bewa-ba-non.*
child-DIM.ABS sleep-FUT-DS 1-ABS sing-PROS
"So that the baby sleeps, I am going to sing."

However, full complement clauses are not marked for SR in Shipibo (Valenzuela 2003: §10.3). For example, the subject of the complement of 'think' is the same as the matrix subject in (9a) and different from the matrix subject in (9b), but the difference is not expressed in the morphology of the embedded verb, which bears the "infinitive" suffix *-ti* in both cases (see also Valenzuela (2003: 488) for 'want', Valenzuela (2003: 492) for 'know').

(9) Shipibo (fieldwork)

a. Jose-kan [(pro) Rosa kena-ti] shinan-ke.
José-ERG (he) Rosa call-INF think-PFV
"José thought to call Rosa; José thought he'd call Rosa."

b. E-n-ra shinan-ke [Jose-kan Rosa kena-ti].
1-ERG-EV think-PFV José-ERG Rosa call-INF
"I thought that José was going to call Rosa."

Using SR forms like *kena-xon* (SS) and *kena-ke-tian* (DS) instead of *kena-ti* is impossible here. Other complement-taking verbs select complements marked with the participial suffixes *-a* (perfective) and *-ai* (imperfective), but none take complements with SR marking (except aspectual verbs; see below). In Shipibo, then, we do find SR where we do not expect to find it from the perspective of ghostly DP control (high adjunct clauses), and we do not find SR where we do expect to find it (complement clauses).

Moreover, languages that are like Shipibo in this regard seem to be at least as common as languages that are like Choctaw. McKenzie's (2015) survey of SR in almost 70 North American languages has some 29 languages that allow SR marking on adjunct clauses but not complement clauses, whereas it has only one language (Mikasuki) that is claimed to allow SR on complement clauses but not adjunct clauses. Other languages that have SR marking on adjunct clauses but not complement clauses include Kiowa, Seri, Ute, and the Pomoan languages, as well as many Quechua varieties other than innovative Imbabura Quechua (Cole 1983, Hermon 1985). There seems to be an implicational universal here: if a language allows SR marking on complement clauses, then it also allows SR on adjunct clauses, but not vice versa. This implication goes in the opposite direction of indexical shift and logophoric phenomena, which are possible in (a subset of) adjunct clauses only if they are possible in complement clauses. Since ghostly DPs are licensed by control in complement clauses but not high adjunct clauses, they seem like the wrong tool for the job in Shipibo, and part of the answer at best in Choctaw.

3. Direct Agee for SR in adjunct clauses

I start by fleshing out in more detail the argument that there is no controlled ghostly DP (SROp) in SR-marked adjunct clauses (except perhaps for purposive clauses). Suppose that there was an SROp in the periphery of high adjunct clauses in languages like Choctaw and Shipibo. This SROp would presumably not have intrinsic interpretable phi-features. This would force it to undergo OC, as other ghostly DPs that do not have interpretable feature must. The evidence that SROp does not have intrinsic phi-features is that there are no featural

restrictions on the DPs that can control it, or on the DPs that it binds in the embedded clause. For example, first and second person pronouns can be the pivots and antipivots of an SR construction just as well as third person DPs can. Finer's (1984) early generative study observed this, using it as an argument against the view that SR exists only for the functional purpose of disambiguating sentences that would otherwise be ambiguous. (10) shows that complement clauses in Choctaw can be marked for SS when the pivot and antipivot are first or second person pronouns, just as they can be when the pivots are coreferential third person nominals (see (1a)).

(10) Choctaw (Broadwell 2006: 282, 269)

*a. Chi-sso-ka-**t** ikhána-li-h.*
2SG.ACC-hit-C-SS know-1SG-TNS
"I know that I hit you."

b. [Hashok is-sa-chali-ka-t] kátihmih is-sam-apiis-ahiina-h?
grass 2SG-1SG.ACC-cut-C-SS how.much 2SG-1SG.DAT-charge-POT-TNS
"How much will you charge me (for you) to cut the grass for me?"

Nor is SR limited to reference tracking of [+human] DPs (see (16) below), or DPs that are empathy loci, or discourse topics, or the like. I thus have no reason to say that SROp has any intrinsic features. Within my framework, this implies that SROp would need to undergo obligatory control in order to receive features that allow it to be interpreted at the LF interface, like the SoK found in upward C-agreement constructions and the lOp found in logophoric constructions, following the reasoning introduced in Chapter 3 and developed in Chapter 5. However, high adjunct clauses are not a context of OC according to the GOCS, since they are not merged inside the projection of a lexical head like V. Therefore, SROp cannot be the basis of SR in these adjunct clauses. At best it would be inert in this structure, not being assigned any controller, and thus would not contribute anything to its behavior. More likely, the uncontrolled operator would cause the structure to crash.

Suppose for the sake of argument that we did posit some kind of special interpretable feature for SROp, perhaps something harder to detect, along the lines of my claim that the zOp in Japanese is [+empathy] and nOp in Abe is [+Topic]. Then the SROp in high

adjunct clauses could potentially undergo some form of NOC. This leads to two kinds of problems. The first is that within my assumptions this could make SR marking possible not only on high adjunct clauses but also other kinds of clauses not generated inside VP, such as relative clauses that modify an overt external head noun and root clauses within a connected discourse. This is dubious at best, at least for the languages focused on here. Shipibo, for example, does not allow SR on relative clauses, whether externally headed or not; rather the verb in the relative clause bears a participial affix that expresses aspect (perfective or imperfective) but not reference tracking (Valenzuela 2003: §10.2).[5] Moreover, if an NOCed SROp was possible in a root clause, one might expect to see it in B's answer to A in an interchange like (11). Here an SROp in B's root clause would take 'Mary', the topic of A's sentence, as its antecedent. The C head that licenses SROp would then Agree upward with the NOCed SROp and downward with the subject of the sentence, taking the SS form, since these two DPs have the same reference.

(11) A: As for Sam_i, have you seen him_i lately?
B: Yes, he_i came-SS yesterday on the evening train.
[$SROp_i$ $C_{[i,i]}$ [he_i came yesterday]]

There is nothing incoherent about this pattern, but it is not how Shipibo works, or the other better-studied languages of the Americas.[6]

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[5] The literature says that SR marking is possible on relative clauses in a minority of languages with SR. However, many if not all of the languages that allow this have internally headed relative clauses (IHRCs). SR marking is possible in IHRCs in Choctaw, Washo, and Hopi, for example, although not in Shipibo or Imbabura Quechua (Cole 1985: §1.1.2.3). These IHRCs are not obviously different in syntactic structure from a (nominalized) complement clause. Indeed, Arregi and Hanink (2022) and Broadwell (2006: 300) claim that there is no syntactic difference between a CP complement and a relative clause in Washo and Choctaw, respectively. If they are right about this, then what I say below about SR on CP arguments of a V may carry over to this kind of relative clause as well. However, I do not pursue this, since I cannot investigate the nature of IHRCs here. (Crucial questions would be what kind of C is present in IHRCs, can it have the same kind of null operators as complement clauses can, and are they subject to obligatory control.) I conjecture that SR marking is never possible in languages that only have relative clauses with external heads.

[6] The potentially tricky empirical point here is that it is not always clear whether a

For example, Broadwell's (2006: 266-268) discussion of SR in discourse in Choctaw concludes that "The switch reference markers that appear on the verbs of subordinate clauses can almost always be accounted for strictly in terms of the grammatical relation 'subject'. It is generally the case that the Choctaw switch-reference markers signal changes in subject, not changes in agent, topic, or some other notion." So the claim that SR in high adjunct clauses is the result of an SROp undergoing NOC does not fit well with the larger pattern.

The other problem with saying that SR on adjunct clauses is the result of an SROp undergoing NOC is that then it could be bound at a distance by something other than an argument of the immediately superordinate clause. If this is possible, it would make available a kind of nonlocal SR, in which the subject (or some other prominent DP) of a higher clause functions as the antipivot for SR marking, rather than the subject of the immediately superordinate clause. For NOC of the PRO subject of an infinitival adjunct in English, this is possible; see Landau (2021) for discussion. For example, in (12) the PRO subject of a temporal adjunct adjoined to an embedded clause can have as its antecedent/controller the subject of the highest clause ((12a)) as well as the subject of the immediately superordinate clause ((12b)).

(12) English (personal knowledge)
  a. John_i was upset because [[after PRO_i perjuring himself_i for her_k sake] Mary_k should have been more grateful].
  b. John_i was upset because [[after PRO_k perjuring herself_k at the hearing] Mary_k should have been more careful].

But this sort of LD control is not possible in SR constructions in languages where this has been studied carefully. Whenever the clausal embedding structure is clear, it turns out that SR tracks the coreference of subjects in adjacent clauses only. Camargo Souza (2020: 18-19) gives a nice demonstration of this for Panoan languages using data from Zariguiey's (2011) study of Kashibo-Kakataibo (similar arguments are found in Finer (1984) and Arregi & Hanink (2022)).[7] Kashibo has two very useful properties for studying this

reference-marked clause is syntactically a subordinate clause or not. This has been challenged for so-called clause-chaining constructions, particularly in New Guinean languages. I do not take up the question of the syntactic status of clause-chaining here.

[7] However, the crucial example in Arregi & Hanink's (2022) argument for the

issue. First, SS markers agree in case (ergative or absolutive) with the antipivot in the higher clause. Second, Kashibo has second position clitics which appear after the first constituent in the sentence, revealing some of the constituent structure.[8] Consider then example (13). Here SS marking on the first verb 'eat' can either have the ergative form agreeing with the (null) subject of the intermediate verb, transitive 'drink', or it can have the nominative form agreeing with the (null) subject of the highest verb, intransitive 'run'.

(13) Kashibo (Zariquiey 2011: 564)
*Ë=x kana pi-**tankëx-(un)** xëa-i abat-a-n.*
1SG=NOM NAR.1SG eat-SS.PFV-(ERG) drink-SS.IPFV.NOM run-PFV-1/2
"Drinking after eating, I ran" *or* 'After eating, I ran drinking."

Putting aside any difference in meaning that may go with the case marking on 'eat', (13) could make it look like the antipivot for the "after I ate" clause can be either the subject of the closest verb 'drink' or the subject of the more distant verb 'ran'—as PRO can be controlled by the closer subject 'Mary' or the higher subject 'John' in (12). However, the second position clitic *kana* reveals that these two markers on 'eat' crucially go with different phrase structures, as shown by (14). Here the matrix subject 'I' has been pro-dropped, so it does not count as the first overt constituent in the sentence. Now *kana* can come either after the 'eat' clause alone ((14a)), or after a larger constituent consisting of 'eat'+'drink' ((14b)).

(14) Kashibo (Zariquiey 2011: 565, 567)
*a. [(pro) pi-tankëx-(*un)] kana [[(pro) xëa-i] (pro) abat-a-n].*
pro eat-SS.PFV-(*ERG) NAR.1SG pro drink-SS.IPFV.NOM pro run-PFV-1/2
"After eating, I ran drinking."

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locality of SR involves nested internally headed relative clauses, rather than adjunct clauses, and I am putting that type of SR aside here (see fn. 5).

[8] This argument should be replicable in Shipibo, and perhaps in Yawanawa, which have similar grammatical resources, but this has not been done.

b. [[pro pi-tankëx-(un)] pro xëa-i] kana [pro abat-a-n].*
pro eat-SS.PFV-*(ERG) pro drink-SS.IPFV.NOM NAR.1.SG
pro run-PFV-1/2
"Drinking after eating, I ran."

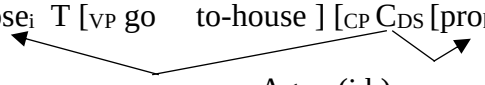
(14b) shows that if the 'eat' clause is an adjunct attached to the 'drink' clause, such that they count as a single constituent for *kana* placement, then the SS marker must agree in case with the subject of the 'drink' clause, showing ergative morphology. It cannot be marked with nominative case, as could be expected if it can be controlled long distance by the subject of the root clause verb 'run'. (14a) shows that the 'eat' clause can also appear by itself in the first position of the matrix clause, followed by *kana*. In this case, it does bear nominative case, showing that the subject of 'run' is its antipivot. But that is because the 'eat' clause is an adjunct attached directly to the root clause in this case; it could not move to sentential initial position if it was originally inside the adjunct clause headed by 'drink' because of the adjunct island condition. In other words, the second position clitic shows that the structure in (14a) is [[when I ate] [[when I drank] I ran]], whereas in (14b) the structure is [when [[when I ate] I drank] I ran]. Then case agreement shows that in the (14b) structure [when [[when I ate] I drank] I ran], SR on the most deeply embedded adjunct 'ate' can only be controlled locally by the subject of the intermediate adjunct clause headed by 'drank', not nonlocally by the subject of the highest clause headed by 'ran'. Therefore, we do not see the behavior we would expect if the most deeply embedded clause had an SROp subject to nonobligatory control, on a par with PRO in adjunct clauses in English. I conclude that the grammar of operators and control does not do what we need to have done for SR on high adjunct clauses.

This is part of why B&CS and other Agree-based theories have an analysis of SR in which C in the adjunct clause has no operator, but enters into Agree directly with the superordinate subject probing upward, as well as with the embedded subject probing downward. On this hypothesis, which I adopt here as well, the structure for a canonical pair of adjunct SR examples in Shipibo is not (2) but (15).

(15) a. [Jose$_i$ T [$_{VP}$ go to-house] [$_{CP}$ C$_{SS}$ [pro$_k$ see Rosa]]]

Agree(i,k)
C_{SS}(i,k)=i is coreferential with k

b. [Jose$_i$ T [$_{VP}$ go to-house] [$_{CP}$ C_{DS} [pro$_k$ see Rosa]]]



Agree(i,k)

C_{DS}(i,k)=i is not coreferential with k

Indeed, all the contemporary Agree-based analyses are similar in relying on direct Agree between the C of the embedded clause and the matrix clause subject: see Arregi & Hanink (2022), Clem (2023), and Ikawa (2022).[9]

An expectation that emerges from this direct Agree view is that SR marking on adjunct clauses should be purely structurally determined. The antipivot for SS marking should be simply the DP in Spec TP—the one that C could find probing upward from a position adjoined to VoiceP.[10] Having a subject-like thematic role (agent, source, experiencer) should not come into it, the way that it does for the controlled operator constructions we have studied so far. This is well-supported in Shipibo and Yawanawa. For example, SS marking is fine when the matrix verb is an unaccusative verb, with a theme argument that becomes the surface subject.

(16) Yawanawa (Livia Camargo Souza, p.c.)
Ketxa pake-ashe muxi-a.
plate fall-SS.PFV.NOM break.INTR-PST.PFV
"When the plate fell, it broke."

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[9] Although the details vary some as to exactly how a C head in the adjunct clause manages to Agree with the matrix subject. Unlike the rest of us, Clem (to appear) uses cyclic downward agreement from a high position above the matrix subject rather upward Agree from a middlefield position below the matrix subject. Arregi & Hanink (2022) give arguments about why this does not work so well for SR in Washo, one of which is the presence of SR on complement clauses. Clem's version does not work so well for SS marking on the complements of aspectual verbs in Shipibo and Yawanawa either (see below).

[10] However, the adjunct CP can certainly extrapose either rightward or leftward to a clause peripheral position outside the subject of the matrix clause; see B&CS (2020) and Camargo Souza (2020) for discussion. I assume that this extraposition happens after the upward Agree relation has been established (contrast Clem (2023), who argues that the CP adjunct starts out above the subject).

It is also perfectly possible for the antipivot of an SR construction to be an inanimate DP, as in (16), whereas this is impossible or restricted in upward C agreement constructions in the African languages (see Chapter 2) and some logophoric constructions.

It is instructive in this respect to compare two classes of predicates in Shipibo that have no agent but two internal arguments. One class consists of experiencer-theme verbs like *keenti* 'want' and *shinanbenoti* 'forget'. With these verbs, it is the higher experiencer argument that moves to Spec TP position. This is seen in the fact that it is the experiencer argument that triggers third plural agreement on the verb in (17), even though both arguments have absolutive case.

(17) Shipibo (fieldwork)

a. ***Joni-bo-ra*** *kenti* *keen-**kan**-ai.*
person-PL-EV pot want-3PL.S-IPFV
"The people want the pot."

b. **Jose-ra* ***ochiti-bo*** *keen-**kan**-ai.*
José-EV dog-PL.ABS want-3PL.S-IPFV
("José likes the dogs." OK with *keen-ai*)

The predicates that provide a near-minimal comparison with these are applicatives of unaccusative verbs. For these, it is the lower theme argument that moves to Spec TP position, crossing over the applied object with a benefactive/malefactive thematic role. (In Baker (2014), I claimed that the difference is induced by the fact that the benefactee in Shipibo is embedded in a null headed PP which prevents it from moving to Spec TP, whereas the experiencer argument is a simple DP. However, that hypothesis is not crucial here.) The most obvious evidence that the theme argument ends up in Spec TP with these verbs comes from the fact that it receives ergative case, as seen in (18). Camargo Souza (2020: 39 (31b)) also shows that the theme argument is the one that triggers third plural subject agreement on the verb in Yawanawa. (I neglected to check this for Shipibo, but predict that the same is true in this language.)

(18) Shipibo (fieldwork)

a. *Bake-n-ra* *Rosa* *isin-xon-ai.*
child-ERG-EV Rosa get.sick-APPL-IPFV
"The child got sick on Rosa."

b. Nokon shino-n-ra e-a mawa-xon-ke.
my.GEN monkey-ERG-EV me-ABS die-APPL-PFV
"My monkey died on me."

See Baker (2014, 2015) for extensive discussion of why the "crossing" NP movement seen with applicatives of unaccusative verbs feeds ergative case marking, whereas the strictly local NP movement seen with experiencer verbs does not.

Given the baseline behaviors of these two classes of nonagentive predicates, the prediction of the direct Agree approach to adjunct SR is that the experiencer argument will serve as the antipivot when a verb like *keenti* is in the matrix clause, whereas the theme argument will behave as the antipivot when the applicative of an unaccusative verb is in the matrix clause. This is correct, as shown in (19) for experiencer verbs and (20) for applicatives of unaccusatives.

(19) Shipibo (fieldwork)

a. Saweti oin-ax-a, Rosa ja keen-ai.
dress see-SS.PFV.ABS-EV Rosa.ABS it.ABS want-IPFV
"Seeing the dress, Rosa wanted it."

b. Xobo-n ka-ax-a, Rosa koriki shinanbeno-ke.
home-LOC go-SS.PFV.ABS-EV Rosa.ABS money forget-PFV
"Going home, Rosa forgot the money."

c. #Joshin-ax-a, Rosa bimi keen-ai.
ripen-SS.PFV.ABS-EV Rosa fruit like-IPFV
("It having ripened, Rosa liked the fruit." OK: *Joshin-ke-tian-ra*… with DS marking)

(20) Shipibo (fieldwork)

a. Yapa payota pi-xon-ra, nokon shino-n e-a mawa-xon-ke.
fish spoiled eat-SS.PFV.ERG-EV my.GEN monkey-ERG me-ABS die-APPL-PFV
"Having eaten spoiled fish, my monkey died on me."

b. Yapa payota pi-xon-ra, bake-n Rosa isin-xon-ke.
fish spoiled eat-SS.PFV.ERG-EV child-ERG Rosa.ABS get.sick-APPL-PFV
"Having eaten spoiled fish, Rosa's child got sick on her."

The two structures are compared in (21).

(21) a. Rosa$_i$ T [C$_{SS}$ *pro*$_k$ [see dress]] [$_{VP}$ t$_i$ [want it]]]
.**Agree[i,k]**
C$_{SS}$: i is the same as k.

b. monkey$_i$ T [C$_{SS}$ *pro*$_k$ [eat bad-fish]] [$_{ApplP}$ (P+)me [$_{VP}$ die t$_i$]]]
Agree[i,k]
C$_{SS}$: i is the same as k.

If thematic factors determined which argument was the antipivot, I would expect experiencer arguments and benefactee/malefactee arguments to pattern together, since both are "affected arguments" of sorts, and they sometimes behave similarly in control paradigms.[11] Instead, it is which argument moves to Spec TP that is the deciding factor here. The fits the expectations of a direct Agree approach. In contrast, the control of PRO is rarely if ever strictly limited to the structural subject, even for control into adjunct clauses (Landau 2021).

This also seems to be the case for other languages, as far as is known. The fact that the nonagentive subjects of unaccusative verbs can function as antipivots for SR constructions on a par with subjects of agentive verbs seems to be widespread. Choctaw provides good examples. In this language, the NP arguments of unaccusative and dative-subject verbs trigger a different kind of agreement on the verb, showing overtly that there is a grammatical difference (Davies 1986). Nevertheless, they are still surface syntactic subjects, as shown by the fact that they bear marked nominative case. And they are antipivots for SR marking, as in (22).

(22) Choctaw (Broadwell 2006: 294)
Iya-li-h-makoo-sh ***sa****-nayopp-aachi-k* *kiiyo-h.*
go-1SG-TNS-CONCESS-SS 1SG.ACC-happy-IRR-TNS NEG-TNS
"Even if I go, I will not be happy."

See also Hermon (1985: 125) for examples of the quirky-accusative

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[11] For example, in English the experiencer controls PRO in *Mary$_i$ remembered a sandwich [PRO $_i$ to eat for lunch]* and the benefactee does in *I made Mary$_i$ a sandwich [PRO$_i$ to eat for lunch]*.

subject of a nonagentive experiencer verb like ‘be cold’ functioning as the antipivot for SR in an adjunct clause in Imbabura Quechua.[12]

A particularly good demonstration comes from Imbabura Quechua, which has a (kind of) passive construction. Jake (1985: 59-60) shows that the theme argument/derived subject of a passive can act as the antipivot for SR marking in this language (see also Cole 1983: 8-9, Hermon 1985: 124-125). In contrast, the agent argument/thematic subject of a passive cannot be the antipivot.[13]

(23) Imbabura Quechua (Jake 1985: 59)

*a. Wawa shamu-shpa/*jpi-ca pai-lla alcu cani-shca-mi ca-rca.*
child come-SS/*DS-TOP he-EMPH dog bite-PASS-EV be-3.PST
“When the child$_i$ came, he$_i$ was bitten by the dog.”

b. Wawa shamu-jpi-ca alcu pai-lla-ta cani-rca-mi.
child come-DS-TOP dog he-EMPH-ACC bite-3.PST-EV
“When the child$_i$ came, the dog bit him$_i$.”

(24) Imbabura Quechua (Jake 1985: 60)

a. Milma-ta randi-shpa-mi taita ruwana-ta awa-rca.
wool-ACC buy-SS-EV father poncho-ACC weave-3.PST
“After he$_i$ bought wool, father$_i$ wove a poncho.”

*b. Milma-ta randi-jpi/*shpa-mi ruwana taita awa-shca ca-rca.*
wool-ACC buy-DS/*SS-EV poncho father weave-PASS be-3.PST
“After he$_i$ bought wool, a poncho was woven by my father$_i$.”

SR on adjunct clauses contrasts in this respect with indexical shift in Magahi and LD anaphora in Japanese, where Sp and zOp can be

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[12] Pomoan languages seem to be different in this respect, but that is because they have unusual active case marking systems, in which the arguments of (some) unaccusative verbs bear a different case marking from the arguments of unergative verbs, and there is a case matching condition on SS-marking in these languages. See Baker & Camargo Souza (2020) for some discussion.

[13] In contrast, passive seems not to feed SR marking in the Seri language, according to Marlett (1981). This fits if the so-called passive in this language is really an impersonal subject construction, in which the underlying object does not move to subject position (even though it does trigger “subject” agreement on T under some conditions). See Baker & Camargo Souza (2020) for a brief discussion.

controlled by a passive agent. I also argued in Chapter 2 that passive agents can control SoK in Kinande, even though this does not result in visible C-agreement because of the T/Agree Condition.

Another demonstration that the structural subject is crucial for adjunct SR rather than the thematic subject comes from possessor raising. Broadwell (1990, 2006) argues that genuine possessor raising can happen in Choctaw, in which the possessor of an NP raises from its initial position inside NP to an (outer) Spec TP position.[14] This accounts for the alternation in (25), where (25b) has the raised possessor: it bears nominative case, triggers agreement on the verb, and does not have to be linearly adjacent to the possessed noun. It contrasts with its unraised counterpart in (25a) in all three respects.

(25) Choctaw (Broadwell 2006: 303, 304)

*a. John (*piláashaash) im-ofi-yat illi-h.*
John yesterday 3.POSS-dog-NOM die-TNS
"John's dog died (yesterday)."

b. John-at (piláashaash) ofi-yat im-illi-h.
John-NOM yesterday dog-NOM 3.DAT-die-TNS
"John's dog died (yesterday)."

A raised possessor in the matrix clause can then count as the antipivot for SS marking on an adjunct clause. This NP does not have a subject-type thematic role with respect to the matrix verb, but it is in the right syntactic position for C_{SS} or C_{DS} to enter into Agree with it by probing upward from the middlefield of the clause.[15]

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[14] This statement updates the terminology some; Broadwell actually says that possessor raising adjoins the possessor to IP.

[15] This example is also grammatical with the thematic subject as the antipivot. Following in essence Broadwell, we can say that both DPs here are immediately contained in TP (as specifiers or adjuncts), such that they are equidistant and either can be the goal of a C_{SR} probe. Alternatively, we might be able to say that the thematic subject stays in Spec VoiceP in this case, and the adjunct clause can be generated either just below it or just above it. If the adjunct clause is below Spec VoiceP, then the thematic subject is selected as the antipivot; if it is above Spec VoiceP, then the raised possessor is selected as the antipivot.

(26) Choctaw (Broadwell 1990: 231)
Jan-at ofi'-at im-ambiika-tok [sa-kisili-tokat].
Jan-NOM dog-NOM 3.DAT-sick-PST 1SG.ACC-bit-C.SS
"Jan$_i$'s dog$_k$ was sick when she$_i$/it$_k$ bit me."

So far, then, we are finding differences rather than similarities when we compare SR constructions with the constructions studied in the earlier chapters of this work. The differences are of two kinds: (i) SR is widely possible in high adjunct clauses, and (ii) the matrix element that participates in the structure is the DP in Spec TP, not the DP that is associated with the initiator thematic role. These differences show that a direct Agree account is warranted for antipivot selection with adjunct clauses, rather than an operator-control analysis.

4. Adjunct-complement differences in SR

The direct Agree analysis of many core instances of SR can also play a role in explaining the typological pattern mentioned above, that quite a few SR languages allow SR marking on adjunct clauses but not on (all/most/some) complement clauses.

That there is something to explain here can be seen in an instructive way within the Washo language, based on work by Arregi & Hanink (2022) and Bochnak & Hanink (2022). Temporal adjunct clauses are characterized by having the dependent mood marker *-a*, as opposed to the independent mood marker *-i* that is used in matrix clauses. They also show an SR distinction: the embedded verb bears *-Ø* marking in SS situations and *-š* marking in DS situations. This is seen in (27).

(27) Washo (Arregi & Hanink 2022: 685; Bochnak & Hanink 2022: 993)
*a. [Mé:hu ʔ-élšɨm-aʔ-**Ø**] (pro) ʔ-émc'i-gaʔlám-é:s-i.*
boy 3-sleep-DEPT-SS pro 3-wake.up-want-NEG-INDEPT
"While the boy$_i$'s sleeping, he$_i$ doesn't want to wake up."

*b. [L-emlu-aʔ-**š**] ʔ-imeʔ-leg-i.*
1-eat.INTR-DEPT-DS 3-drink-REC.PST-INDEPT
"While I was eating, he was drinking."

These adjunct clauses can be compared with so-called nonfactive

complement clauses in Washo.[16] These have the same basic morphosyntactic structure as adjunct clauses, featuring the dependent mood marker *-a* (and no D-like head; see below). Nevertheless, they are not marked for SR. In particular, the DS affix *-š* does not appear in this context, regardless of whether the embedded subject is the same as the matrix subject or not. The verb of the complement clause is unmarked in this context (which happens to look like the SS marker Ø).[17] This pattern is seen in constructions with matrix verbs like 'think', 'say', 'dream', and 'believe'. (28a,b) show that different subject examples are not marked with the DS morpheme , and are not visibly different from the same subject example in (28c).

(28) Washo (Bochnak & Hanink 2022: 980, 984, 993)

a. Béverli [démlu di-beguweʔ-e:s-aʔ] Ø-hamu-i.
Beverly good 1/3-buy-NEG-DEPT 3-think-INDEPT
"Beverly thinks that I didn't buy food." (no DS *-š*)

b. Di-p'at'iʔ-gim-uweʔ-tiʔ-aʔ ʔ-i:d-i.no.
1-play-go.out-hence-FUT-DEPT 3-say-INDEPT
"She said I could go play." (no DS *-š*)

c. Géwe [Ø-dotig-ha-aʔ] Ø-hamu-aʔ.
coyote 3/3-burn-CAUS-DEPT 3-think-DEPT
"Coyote$_i$ thought that he$_i$ burned him$_k$ [the lizard] to death."

Bochnak & Hanink also provide the minimal pair in (29), which shows that the argument/adjunct distinction correlates with the SR/no-SR distinction.

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[16] Bochnak & Hanink (2022) actually argue that these are not CP complements but rather very low adjunct clauses. I keep to the more traditional view that they are complements, but the point is not crucial; see fn 18 for discussion.

[17] Washo has another kind of CP complement that does show SR marking—so called factive complements. This plays a key role in the next section.

(29) Washo (Bochnak & Hanink 2022: 993 (40))

a. [Sukuʔ le-gitʼi-aʔ] di-gum-suʔuʔuš-leg-i.
dog 3/1-bite-DEPT 1-REFL-dream-REC.PST-INDEPT
"I dreamt that the dog bit me." (complement)

b. [Sukuʔ le-gitʼi-aʔ-š] di-gum-suʔuʔuš-leg-i.
dog 3/1-bite-DEPT-DS 1-REFL-dream-REC.PST-INDEPT
"I was dreaming while the dog bit me." (time adjunct)

The question arises, then, why is SR marking not possible on this kind of complement clause, even though this language has the morphosyntactic tools it needs to express it? Because of this, Bochnak & Hanink (2022: 992) stipulate that these clauses do not have a CP projection, but are only MoodPs, "thereby explaining the otherwise puzzling lack of switch reference." I propose to derive this difference from the direct Agree hypothesis instead.

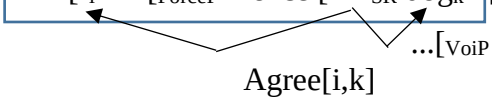
This can be done by combining the direct Agree hypothesis with Chomsky's (2001) Phase Impenetrability Condition (PIC), given that Voice is a phase head. The logic of derivation by phases implies that C in a complement clause can only enter into Agree with the subject of the matrix clause if it is in the representation at the same time as that subject—if it has not already been sent off to Spell Out. That is arguably not the case for the complement clause. I adopt Chomsky's (2001: 13-15) version of the PIC, where the complement of one phase head is removed from the representation when the next phase head is introduced.

(30) Elements in the complement of a phase head H are accessible to the computation until the introduction of the next phase head Z.

Suppose further that SR marking is borne by a lower head of the C-space—for concreteness, say Fin—lower than the phase head in the C-space (say Force). In a higher adjunct clause (one that is adjoined to VoiceP or higher), the adjunct CP is outside the domain of the Voice head in the matrix clause. Therefore, material inside the scope of Force remains until the merger of the matrix Force head. As a result the SR head Fin survives long enough to agree upward with the matrix subject, generated in Spec VoiceP and ending up somewhere in the TP space. The structure for (29b) is sketched in (31); this is an enrichment of (15) that fills in Force, Fin, and Voice heads. The box shows which

elements are present at the crucial stage in the derivation.

(31) [**Force** Fin [I_i T [$_{ForceP}$ **Force** [Fin_{SR} dog_k [$_{VoiP}$ bite me]]]...

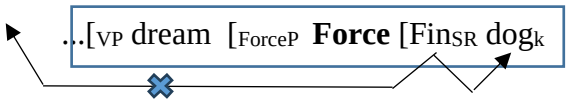


...[$_{VoiP}$ t_i **Voi** [$_{VP}$ dream]]]

Agree[i,k]

In contrast, a complement clause is contained inside VP, so it is inside the domain of the Voice head in the matrix clause.[18] Therefore, the domain of the Force head of the CP complement is spelled out when the matrix Voice head is merged. Therefore, an SR head in the complement clause is gone by the time that there is a subject in the matrix clause in Spec VoiceP to agree with. As a result, the SR head fails to find a second argument. (32) sketches the structure for (29a).

(32) [**Force** Fin [I_i T [$_{VoiP}$ t_i Voi ...



...[$_{VP}$ dream [$_{ForceP}$ **Force** [Fin_{SR} dog_k [$_{VoiP}$ bit me]]]]]]]

This accounts for the Washo contrast in (27) and (28). It is also a style of explanation that can be used more generally to explain why SR is less common on complement clauses than on adjunct clauses across languages. The key idea is that the C of a higher adjunct clause is closer to the matrix subject than the C of a complement clause is because there is no phasal Voice head separating the two.

The direct Agree analysis together with the PIC can also be used to explain some further details about the distribution of SR marking in Shipibo and Yawanawa. We have seen that the SS/DS contrast exists on adjunct clauses of various types, but not on full complement clauses—not on the infinitival complement of a verb like ‘think’ in Shipibo (see (9)), or on clauses headed by so-called participle verbs ending in *-a* (perfective) or *-ai* (imperfective) (Valenzuela 2003: 491-

[18] Bochnak & Hanink (2021) claim that nonfactive clauses in Washo are adjuncts adjoined low, to the VP, rather than true complements of the verb. I could take this hypothesis on board too: a CP adjoined to VP is also within the spell out domain triggered by the phase head Voice. The structure in (32) would be slightly different, but the conclusion that SR marking on this type of clause is ruled out by the PIC would remain unchanged. (I do not find their arguments that the CP is an adjunct rather than a complement fully compelling, though.)

494). However, Shipibo has a small number of verbs that do allow SS marking on their complement, namely the aspectual verbs 'begin', 'stop' and 'finish' (Valenzuela 2003: 319-322, 588-590).[19] Examples are given in (33). DS marking is not possible with these verbs, because they are raising/control type verbs such that the understood subject of the complement is always the same as the subject of the matrix verb itself (compare English: *Mary began (*for John) to read the book*). However, the form of SS marking varies with the case of the matrix subject, just as SS marking on adjunct clauses does. This supports the view that there is real SS marking in this construction, not just a frozen form that is derived historically from SS marking.[20]

(33) Shipibo (fieldwork)

*a. E-a-ra teet-**i** peokeo-ke.*
1-ABS-EV work-IPFV.SS.ABS start.INTR-PFV
"I started to work."

*b. E-n-ra nami pi-**kin** peo-ke.*
1-ERG-EV meat eat-IPFV.SS.ERG start.TR-PFV
"I started to eat meat."

Camargo Souza (2020: Ch. 4) shows that Yawanawa also has this construction, with cognate morphemes. She uses extraction evidence to confirm that the SS-marked constituent is not an adjunct clause in this case: one cannot move a *wh*-phrase out of an SS marked adjunct clause in an example like (34a) (the adjunct island condition), but one

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[19] Shipibo also has SS marking in various auxiliary structures, in which verbs like 'go' and 'do' are used as auxiliaries and the thematic verb bears SS marking (Valenzuela 2003: section 7.12.2). I assume that these have a very similar analysis to the constructions discussed in the text—a version of the general fact that restructuring constructions are very much like auxiliary constructions, where V takes a VP complement. There are, however, some differences of morphological detail, which I do not go into here.

[20] The verb 'start' also varies morphologically in (33), matching the transitivity of the verb in its complement. I do not consider that aspect of the construction here; see Camargo Souza (2020: ch. 4) for an analysis. Shipibo also has an inverted "insubordinate" version of this construction, where SS marking is on the aspectual verb and the other verb bears the normal aspect morphology of a matrix clause (Valenzuela 2003: 320). I do not analyze that version here.

can move a *wh*-phrase out of the SS-marked constituents associated with ‘begin’ and ‘know’ in Yawanawa, as shown in (34b,c).

(34) Yawanawa (Camargo Souza 2020)

*a. *Awea=meN [-- pitxaN-pai-ki-N] Shaya-N mai keti hi-a?*
what=Q cook-DESID-SS-ERG Shaya-ERG clay pot buy-PFV
(“What did Shaya buy a clay pot wanting to cook (it)?”

b. Awea=meN Shukuvena-N [-- ane-ki-N] tae-wa?
what=Q Shukuvena-ERG read-SS-ERG begin-TR.PFV
“What did Shukuvena begin to read?”

c. Awea=meN Shukuvena-N [-- wa-ki-N] tapiN-a?
what=Q Shukuvena-ERG make-SS-ERG know-PFV
“What does Shukuvena know how to make?”

The question arises, then, as to why SR marking is found on the complements of this class of verbs, but not more generally.

My answer, following Baker and Camargo Souza (2024), is that what is special about aspectual verbs is that they are *restructuring* verbs. They are verbs that select a complement that includes a VP, but that is less than a full CP/ForceP. This is not at all a surprising hypothesis from a crosslinguistic perspective: aspectual verbs are canonical restructuring verbs (Rizzi 1982, Burzio 1986: 324, Wurmbrand 2003), taking “reduced” (small) complements more often than not across languages. There is indication that this is true for Shipibo already in (33). Note that the subject of the sentence bears ergative case in (33b) but absolutive case in (33a). This is determined not by the matrix verb ‘start’ itself, but by the transitivity of the verb that heads the complement of ‘start’. If the complement contains a transitive verb like ‘eat’, the subject of the sentence as a whole is ergative; if it contains an intransitive verb like ‘work’, the subject of the sentence as a whole is absolutive. This shows that there is no phase boundary associated with the complement of ‘start’ to hide the object of ‘eat’ from the subject of the sentence—assuming a dependent case analysis of ergative marking, such that an NP is ergative if and only if it c-commands another NP in the same local domain (Baker 2014, 2015). This behavior of ‘begin’ is notably different from that of a verb like ‘think’, which takes an infinitival complement. ‘Think’ is not a canonical restructuring predicate, but tends to select a full CP complement crosslinguistically. Indeed, in Shipibo its subject does not

vary in case depending on the transitivity of the verb in its complement. Rather, the subject of 'think' is consistently ergative, because its clausal complement as a whole counts as nominal in Shipibo (Valenzuela 2003: ch. 10).

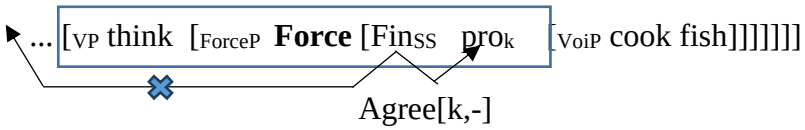
(35) Shipibo (Fieldnotes)

*a. Maria-nin-ra/*Maria-ra bewa-ti shinan-ke.*
Maria-ERG-EV/*Maria.ABS-EV sing-INF think-PFV
"Maria thought to sing."

b. Yapa yoa a-ti-ra Maria-nin shinan-ke.
fish cook do.TR-INF-EV Maria-ERG think-PFV
"Maria thought to cook fish."

Now if verbs like 'begin' do not have a Force head in their complements to hide the embedded object from the matrix subject, it follows that they also do not have a Force head to hide Fin_{SS} from entering into Agree with the matrix subject. Therefore, SS marking is possible on the complement of a verb in Shipibo in just this case. The Voice head is still there as a potential phase head (presumably), but the Force head is not and it takes two phase heads to trigger Spell out in Chomsky's (2001) version of the PIC. The structure for (35b) with a full CP complement is in (36a) (parallel to (32)); it can be contrasted with the structure for (33b) with a restructuring complement in (36b).

(36) a. [Force Fin [Maria$_i$ T [$_{VoiP}$ t$_i$ **Voi** ...



b. [**Force** Fin [Maria$_k$ T [$_{VoiP}$ t$_i$ **Voi** [$_{VP}$ start [Fin$_{SS}$ t$_k$ ...

Following Camargo Souza (2020), I assume that 'begin' is a raising verb, and that SR morphology is still associated with the Fin head in this construction. Since FinP is not contained in ForceP in this case, the first phase head whose complement properly contains FinP is the

matrix Voice. The complement of this Voice head is spelled out when the next highest phase head is merged. In this case, that is the matrix Force. Therefore, Fin_{SS} and the matrix subject *Maria* are contained in the same spell out domain, and Fin_{SS} can agree directly with *Maria* (or its trace). This is compatible with SS marking and not DS marking, since Fin also agrees downward with the null subject of its TP/AspP complement, which is bound by and thus coreferential with *Maria*.

A fine-grained difference between Yawanawa and Shipibo confirms that restructuring is the crucial factor here. Yawanawa does not have an analog of Shipibo's infinitival morpheme *-ti*. Rather, cognitive verbs like 'know' take a different kind of complement in this language. When the complement of a 'know'-class verb in Yawanawa has a PRO subject controlled by the matrix subject, the complement bears SS morphology—like in the aspectual verb construction. Other verbs in this class in Yawanawa have the meanings 'forget,' 'dream', and 'think' (Camargo Souza 2020: 120).

(37) Yawanawa (Camargo Souza 2020: 120)

a. *Shaya [(PRO) saik-i] tapiN-a.*
Shaya.NOM sing-SS.NOM know-PFV
"Shaya knows how to sing."

b. *Shaya-N [(PRO) yuma pitxaN-ki-N] tapiN-a.*
Shaya-ERG fish cook-SS-ERG know-PFV
"Shaya knows how to cook fish."

One obvious way that Yawanawa is different from Shipibo in this domain is that cognitive verbs take SS marked complements rather than infinitival complements. But a second way that Yawanawa is different from Shipibo is that a verb like 'know' shows the restructuring-style case pattern. The matrix subject *Shaya* is absolutive in (37a) and ergative in (37b). This is conditioned not by the complement of 'know' as a whole, but by whether the embedded verb has a direct object or not: 'cook' in (37b) does, but 'sing' in (37a) does not. This shows that there is no Force head associated with the complement of 'know' in Yawanawa, the way that there is with the complement of 'think' in Shipibo. Therefore, SS marking is possible on the complement of 'know' in Yawanawa, whereas it is not possible on the complement of 'think' in Shipibo. In both languages, SS marking is possible only in the complements of restructuring verbs; the difference is that that class happens to be a bit larger in Yawanawa

than in Shipibo, because of differences in the stock of complementizing morphemes in the two languages.

So far, the operator-free direct-Agree analysis of SR is doing very well. On a large-scale, it explains why SR is found on adjunct clauses but not on complement clauses in a wide range of languages. On a smaller scale, it explains why SR is found on the complements of restructuring verbs (and auxiliaries) in the Panoan languages, but not on the complements of verbs that take unreduced CP (or DP) complements in Panoan or Washo. SR constructions are thus not that much like the ones studied in other chapters of this work. So far!

5. SR on CP complements: Enter SROp

Now it is time to return to the fact that SR is possible on the full CP complements of verbs in some other languages, such as Choctaw (see (1)). What are we to make of this, in light of the analysis developed in the last two sections? Why aren't all languages like Shipibo and Yawanawa in banning this? After all, we do not expect substantial variation in the PIC itself. And while there is possible variation as to what is a phase head, some C-like head always counts, it seems.

Language-internal comparison in Washo again gives valuable clues. In the last section, we saw that adjunct clauses in Washo allow SR marking, whereas nonfactive complements with comparable internal structure do not. This was one of my key motivations for an account in terms of direct Agree as restricted by the PIC. But Washo offers us a second very relevant comparison: one between nonfactive clausal complements (a pair is repeated in (38)) and so-called factive clauses (Bochnak and Hanink 2022). Factive complement clauses are marked for SR, using the same contrast between *-Ø* (SS) and *-š* (DS) that is seen in adjunct clauses. This is shown in (39). These factive clauses are used with verbs that mean 'know', 'forget', 'remember' (= 'not+forget') and 'see'.

(38) Washo (Bochnak & Hanink 2022: 980 (2), 993 (42))

a. Béverli [démlu di-beguweʔ-e:s-aʔ] Ø-hamu-i.
Beverly good 1/3-buy-NEG-DEPT 3-think-INDEPT
"Beverly$_i$ thinks that I$_{sp*}$ didn't buy food." (no DS *-š*)

b. Géwe [Ø-dotig-ha-aʔ] Ø-hamu-aʔ.
coyote 3/3-burn-CAUS-DEPT 3-think-DEPT
"Coyote$_i$ thought that he$_i$ burned him [the lizard] to death."

(39) Washo (Arregi & Hanink 2022: 653, 652; B&H: 980 (1))

*a. Adele [(pro) daláʔak ʔ-íː-gi-yi-**Ø**-ge] hámupʼayʔ-éː-s-i.*
Adele *pro* mountain 3/3-see-INDEPT-SS-DEM.ACC 3/3.forget-NEG-INDEPT
"Adele$_i$ remembers that she$_i$ saw the mountain."

*b. (Pro) [Adele dimeʔ súː-biʔ-i-**š**-ge] di-hámupʼayʔ-éː-s-i.*
I Adele water 3/3.bring-INDEPT-DS-DEM.ACC 1/3-forget-NEG-INDEPT
"I remember that Adele brought the water."

*c. [Ø-haʔaš-ayʔ-i-**š**-ge] di-hamupʼay-i.*
3-rain-PST-INDEPT-DS-DEM.ACC 1/3-forget-INDEPT
"I forgot that it rained."

So I ask why SR—especially overt DS marking—is possible in (39b,c) in Washo, when it is not found in (38a). I ask this both for its own sake, and for the insight the answer might give into the typological question of why SR marking on complement clauses is possible in some languages but not others.

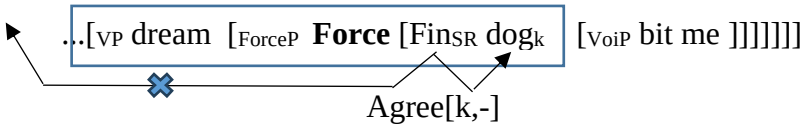
There is another clear structural difference, other than SR marking, between factive clauses and nonfactive clauses in Washo. Factive clauses contain an additional functional head *ge* which appears outside the overt DS marker, at the right edge of the embedded clause, as seen in (39). I assume that *ge* is a C head in this context, although like *that* in English it is homophonous with and no doubt historically related to a pronominal/demonstrative element in Washo (Bochnak & Hanink 2022).[21] Also correlated with this is the fact that the mood marker in

[21] This is likely a bit of a simplification. Bochnak & Hanink (2022) show that *-ge* in factive CP complements is homophonous with an overt third person pronoun found in the language, and it also combines with *hadi* to form demonstrative "adjectives". The C-like use of this element is like the pronominal use in that both show a case distinction: *gi* is a nominative from used as a subject pronoun and in CP subjects, whereas *ge* is an accusative (or default) form used elsewhere. Bochnak & Hanink also make the very plausible suggestion that the semantic factivity that clauses with *ge* have is a reflection of the same "familiarity" condition that is associated with definite articles (Heim 1982). A fuller treatment would probably take *ge* to be a D-like head, while the SROp-selecting C head is something that *ge* selects. (According to Bochnak & Hanink, *ge* is an Index head.) I suppress these details for simplicity's sake.

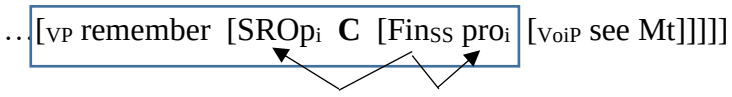
factive clauses is the independent mood *-i*, which is also used in root clauses, not the dependent mood *-a*, which we have seen in both temporal adjuncts and nonfactive complements. These differences in structure make it very unlikely that (39) in Washo is to be understood in terms of restructuring, the way (37) is Yawanawa. If anything, Washo factives are augmented clauses, with an extra head that could count as a phase head, rather than reduced clauses without one.

I claim then that factive clauses in Washo point to quite a different way that UG allows complement clauses to be marked for SR: the additional C head (or something closely associated with it; see fn. 21) licenses a controllable Op—SROp—in the periphery of the CP. As such, *ge* in Washo is like *-li* in Lubukusu (Diercks 2013), *dep* in Uyghur (Sudo 2012), or *be* in Ewe (Clements 1975), which license the controllable operators SoK, Sp, and lOp (respectively) in CP complements in those languages. This SROp is then controlled by the matrix subject, in accordance with the principles of generalized control theory. Although the matrix subject is too far away for C_{SS} or C_{DS} to enter into Agree with it directly, the SROp which is no higher than Spec ForceP is not too far away. Therefore, SR marking is possible in this kind of CP complement, with the structure in (40b). This can be compared with the structure of a nonfactive complement in Washo in (32), repeated as (40a).

(40) a. [**Force** Fin [I_i T [$_{VoiP}$ t_i Voi ...



b. [**Force** Fin [Adele$_i$ T [$_{VoiP}$ t_i **Voi…**



Intuitively, the control of SROp bridges the distance between the matrix subject and the SR head, so that Agree does not violate the PIC the way it otherwise would. The upshot is that, whereas operator-licensing and control is not intrinsic to SR in all languages—it does not happen in Shipibo, for example—it is a UG-approved possibility.

Indeed, some languages *should* have the SR-operator construction in (40b), given the generative notion of UG and how I have set things up. It is simply what one gets if one combines the view that CP complements can have ghostly DP operator that are targets of Agree, motivated by languages like Kinande and Lubukusu, with the view that SR is the result of C entering into a particular kind of Agree with two nearby nominals, motivated by languages like Shipibo. If for some reason we thought that structures like (40b) never existed in languages of the world, that would be the surprise, and we would have to figure out why this particular combination of independently attested possibilities happens to be ruled out. My hypothesis is that it is by taking advantage of this theoretical possibility that some languages have SR on the complements of nonrestructuring verbs. The parameter consists simply of having the right sort of C head in the lexicon, one that licenses a ghostly DP operator and that can be selected by propositional attitude verbs or some subclass thereof.[22]

Washo motivates this analysis in that it shows overtly that SR-marked complements have a different CP structure from both SR-marked adjuncts and non-SR-marked complements—indeed, a more articulated structure. If this is the right approach, then we might hope to see similar structural distinctions in some other languages, although a robust observable universal is probably too much to hope for, given the familiar possibilities of there being null C heads, fusion between adjacent functional heads, and similar morphological complexities. Another language that goes in the same direction as Washo is the Uto-Aztecan language Hopi. (41) shows SR marking on adjunct clauses in Hopi, and (42) shows SR marking on argument clauses. As in Washo, the structure of adjunct clauses is simpler: SS is marked by the single suffix *-t* (there are other versions of SS too), whereas DS is marked by the single suffix *-q*. In contrast, the head verb of a complement clause bears two peripheral morphemes: the complementizing (and

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[22] I also continue to assume that SROp in Washo and the other languages considered lacks intrinsic interpretable features, for the reasons considered hypothetically in §7.3. On the one hand, there are no restrictions on the kinds of DP that can be the pivot or antipivot in SR constructions that would point to SROp having restrictive features. On the other hand, SR-marked clauses have a relatively narrow distribution, being possible as complement clauses but not as root clauses or full headed relative clauses (as opposed to internally headed ones). SR-marked clauses are possible as high adjunct clauses, but that is because of direct Agree, not because of an SROp that does not need to undergo OC.

nominalizing) head *-qa* plus the SR marker, which appears outside it. *-Qa* also conditions different allomorphs of the SR markers. In this context, SS shows up as *-y* and DS (confusingly) shows up as *-t*. I take this variation to be a simple case of morphologically-conditioned contextual allomorphy, handled by late lexical insertion at PF.

(41) Hopi (Hale 1992: 52 (3), 53 (6))

*a. Mi' taaqa noes-**t** (puu') (pam) puwto.*
that man eat-SS then he sleep
"That man$_i$ ate and (then) (he$_i$) went to sleep."

*b. Pam wu'ti noes-**q** (puu') mi' taaqa pitu.*
that woman eat-DS then that man arrive
"That woman ate and (then) the man arrived."

(42) Hopi (Hale 1992: 51 (1), 53 (5))

*a. Nu' 'as [-- kweewa-t tu'i-ni-**qa**-**y**] naawakna.*
I PRT belt-ACC buy-FUT-C-ACC.SS want
"I$_i$ want (me$_i$) to buy a belt."

*b. Nu' ['i-pava 'inu-ngam kweewa-t yuku-ni-**qa**-**t**] naawakna.*
I my-brother me-for belt-ACC make-FUT-C-ACC.DS want
"I want my brother to make me a belt."

It is reasonable, then, to suppose that part of what *-qa* does to make complement clauses possible in Hopi is to license SROp, which is not needed for SR on adjunct clauses like (41) but is needed for SR on complement clauses in (42).

Something similar can be seen a bit more abstractly in Imbabura Quechua (IQ). This language has SR markers on adjunct clauses that it shares with other Quechua varieties (Cole 1983). In adjunct clauses, both the SS marker and the DS markers are monosyllabic and monomorphemic, as seen in (43).

(43) Imbabura Quechua (Cole 1983: 5)

*a. Utavalu-man chaya-**shpa**, ñuka mama-ta riku-rka-ni.*
Otavalo-to arrive-SS my mother-ACC see-PST-1
"When I arrived in Otavalo, I saw my mother."

*b. Juzi Utavalu-man chaya-**jpi**, paypaj wasi-man ri-rka-ni.*
José Otavalo-to arrive-DS his house-to go-PST-1
"When José arrived in Otavalo, I went to his house."

Imbabura Quechua also has innovative SR markers on subjunctive clauses. These subjunctive clauses can function as purpose clause adjuncts, but they can also be used as CP complements of verbs like 'want', as in (45) (see also Cole 1985: 37).

(44) Imbabura Quechua (Herman 1985: 30)

*a. [Juzi pay-paj mama-ta riku-**chun**] muna-ni.*
José his-POSS mother-ACC see-SBJV.DS want-1
"I want José to see his mother."

b. [(PRO) pay-paj mama-ta riku-ngapaj] muna-ni.
PRO his-POSS mother-ACC see-SBJV.SS want-1
"I want to see his mother."

What I want to make something out of here is that *-ngapaj*, the SS marker that can be used in complement clauses, stands out in this paradigm in being bisyllabic. Indeed, it is historically multimorphemic. Cole (1983) says that it is cognate with two morphemes in other dialects of Quechua: a T-like subjunctive morpheme *-na* that comes before subject agreement and a C-like morpheme *-paq* that comes outside subject agreement. The subject agreement varies across examples, and the whole complex of morphemes is used in both SS and DS contexts in non-Equadorian varieties like Ancash Quechua. This is shown in (45).

(45) Ancash Quechua (Cole 1983: 4)

*a. Huaraz-ta shamu-rqu-u [mama-nii-ta rkaa-**na-a-paq**].*
Huaraz-ACC come-PST-1 mother-my-ACC see-SBJV-1-SBJV
"I came to Huaraz (for me) to see my mother."

*b. Fuan-ta Huaraz-ta kacha-rqu-u [mama-nin-ta rkaa-**na-n-paq**].*
Juan-ACC Huaraz-ACC send-PST-1 mother-his-ACC see-SBJV-3-SBJV
"I sent Juan to Huaraz (for him) to see his mother."

The two syllables in the complement SS marker *-ngapaj*, then, are plausibly a hint to Imbabura Quechua learners that there is an extra C head in SR-marked complements that is not present in SR marked adjuncts. This extra head can be taken to be the licenser of the SROp that is required for SS marking to be used on full CP complements.[23]

6. Thematic effects on control in SR complements

My hypothesis, then, is that SR on unreduced CP complements in languages that have it involves the control of a new ghostly DP operator, SROp, as sketched in (40b). A next step is to explore the empirical consequences of saying that these structures involve a relationship of obligatory control and evaluate any predictions that follow from this view. I now turn to this task, although not having access to native speaker judgments for the most relevant languages forces me to leave some predictions for future research.

The central topic to consider along these lines is SR marking on the complements of triadic verbs like 'order', 'send' or 'persuade': verbs that take a goal or theme internal argument as well as an agentive subject and the SR-marked CP complement. Such structures are possible in the languages I have been considering, including Hopi, Choctaw, Imbabura Quechua, and Washo. Examples are:[24]

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[23] Even more speculatively, it might be significant that the most common SR markers in Choctaw CP complements are bimorphemic: complementizing *-ka* or *-o* plus SS *-t/sh* or DS *-N*. In contrast, the most common kind of SR marker on adjunct clauses is monomorphemic: *-na* SS vs *-cha* DS. However, Choctaw has plenty of adjunct clauses that have the form C+*t/N* as well, so this more articulated structure does not automatically mean that an Op is present.

[24] The Washo example is not ideal: it shows that DS can be used when the subject of the complement of 'explain' is different from the matrix subject, but the embedded subject is different from the matrix object as well, so DS is expected whatever C_{SR} chooses as the antipivot. Arregi & Hanink (2022: (18)) argue that the antipivot for SR marking on the theme argument of a ditransitive verb is indeed the matrix subject, not the matrix goal, but their example is an internally headed relative clause, not a factive CP complement. This is probably the same thing (as they claim), but I am not fully committing to that here (see fn. 5).

(46) Hopi (Hale 1992: 67)

*Taaqa tiyo-t [(pro) kaway-mu-y 'oyato-ni-**qa-t**] 'ayata.*
man boy-ACC (he) horse-PL-ACC put-FUT-C-ACC.DS send
"The man sent the boy to put the horses back." (not *-qa-y*)

(47) Choctaw (Broadwell 2006: 273)

*Iya-l-aachi-h-**o-N** a-maka-tok.*
go-1SG-IRR-TNS-PTCP-DS 1SG.DAT-say-PST
"She ordered me to go." (not *-oo-sh* ss)

(48) Imbabura Quechua (Herman 1985: 123)

*Juan-da kunvinsi-rka-ni [(pay) Kitu-man **ri-chun**].*
Juan-ACC persuade-PST-1SG he.NOM Quito-to go-SBJV.DS
"I persuaded Juan (that) he go to Quito." (not *ri-ngapaj* ss)

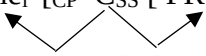
(49) Washo (Emily Hanink, p.c.)

*ʔlót háʔaš-i-**š**-ge mí-łaʔáʔaš-ha-yi.*
yesterday rain-INDEPT-DS-NM.ACC 1/2-explain-CAUS-INDEPT
'I'm telling you about how it rained yesterday.'

It is notable that the examples in (46)-(48) have object-control type meanings, in which the object of the matrix clause is coreferential with the null subject of the embedded subject, the matrix subject having a different referent. It is significant that all three languages use DS morphology in this context, not SS marking. Descriptively, this may not seem surprising, since indeed the matrix subject is different from the embedded subject in these examples. But in fact, contemporary Agree-based theories of SR struggle to explain this fact. As discussed above, these views hold that SS morphology is the realization of a C-type head that probes downward to find a DP in the embedded clause as the pivot (the embedded subject) and probes upward to find a DP in the matrix clause as the antipivot. It then expresses that the two DPs it found by Agree are coreferential (with the exact details differing a bit from account to account). Crucially it is not stipulated explicitly in these theories that the DPs that C finds by probing need to be subjects; that is supposed to follow from the geometry of the construction. This is a special case of the historical Chomskian view that grammatical relations are not primitive notions but reduce to other aspects of syntactic structure. In fact, for a direct Agree account, the first DP that C in the embedded clause should encounter probing upward is the goal or theme object, as shown in the

simplified structure in (50) for (47). (Here I suppress the difference between Force and Fin, which was important above, along with other details.) All things being equal, so-called SS morphology would be expected to show that the downstairs subject is coreferential with the matrix *object* in this special case. This is embarrassingly false; SS is not allowed in place of DS morphology in examples like (46)-(49).

(50) She_k $[_{vP}$ ordered me_i $[_{CP}$ C_{SS} [PRO_i/pro_i go]]]



Agree[i,i] $C_{SS:}$ i is the same as i

Arregi and Hanink (2022) address this issue for Washo by stipulating that the probe on C is case-sensitive, finding only NPs with nominative case as goals.[25] For one particular language, this is a reasonable thing to say. After all, we know that ordinary phi-agreement probes can ignore nonnominative DPs in languages like Icelandic and Hindi, and there is some evidence that Washo is a nominative-accusative aligned language (although this only shows up on pronouns and the C head *ge*). However, this approach seems typologically problematic in that it cannot (it seems) explain why this is the only pattern found in languages that have the relevant construction. We know that agreement probes are parameterized as to whether they are case sensitive or not: T is in Hindi, but not in Nepali or Burushaski (Baker 2008, Bobaljik 2008). The prediction then should be that SS morphology would be used in a structure like (50) in a subset of the accusative-aligned languages, namely the ones in which C_{SR} is not case sensitive. More data would be very welcome, but it is striking that Choctaw, Quechua, and Hopi are accusative-aligned languages from different families, but none of them allow SS morphology in structures in (50). The case sensitive account also

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[25] Clem (2023) also appeals to case sensitivity/discrimination as a possible way of accounting for why switch-reference only tracks subjects in most languages in the typological extensions part of her article. Her analysis of Amahuaca is different in that she allows C to enter into Agree with both the subject and the object in both the main clause and the embedded clause, its realization being potentially sensitive to the features of any combination of these arguments. My concern is that this approach overgenerates from a crosslinguistic perspective, allowing objects to participate in SR marking more than they do. It must be acknowledged, however, that Amahuaca does have unusual instances of SR being sensitive to objects, beyond what is seen even Shipibo and Yawanawa.

predicts that SR should work quite differently in languages with other alignment types. For example, languages with ergative alignment should allow "SS"-marked clauses that track the matrix subject with dyadic verbs or with triadic verbs, but not with both, because some subjects have nominative/absolutive case and other subjects have ergative case.[26] This pattern has not been attested. Finally, for languages with neutral alignment, where there is no case distinction between subjects and objects, the case sensitivity proposal gives us no purchase. Such languages should again allow (50), there being no case to be sensitive to. Case sensitivity is a highly variable and parameterized phenomenon, whereas the behavior of SR marking on complement clauses seems to be stable and relatively invariant. Therefore, case sensitivity seems like the wrong tool for this job.[27]

Indeed, older pre-Agree generative approaches have analogous struggles with the configuration in (50). For example, Hermon (1985) develops a GB theory for Imbabura Quechua which basically assimilates SS clauses to infinitival clauses that have a PRO subject that undergoes control. For this approach, the question is why object control is not possible in (50), given that it is with infinitival complements in so many languages (see Hermon (1985: 122-124), where she realizes that she has to stipulate that Imbabura Quechua allows only subject control, not object control, different from other languages; see also Hale 1992: 67-68). Another leading idea was Finer's (1984, 1985) Binding-theoretic approach, which said that SS morphology is an anaphoric C head whereas DS morphology is a pronominal C head. But anaphors can often take clause-mate objects as their antecedents, so the question also arises for Finer as to why languages do not allow SS in structures like (50). Again, for

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[26] This reasoning assumes that the CP complement is non-nominal, so that it does not trigger ergative on the matrix subject by itself. The predictions are somewhat different if CP is nominal, but still potentially problematic.

[27] A more subtle point is that it is not clear that SR probes can be case sensitive. B&CS (2020) note that, even with adjunct clauses, there is no known language where "SS" marking tracks the absolutive argument in the matrix clause rather than the surface subject. This is true despite there being plenty of ergative languages that have SR in Australia and New Guinea as well as the Panoan languages. This makes sense if morphological case blocks the Agree-Copy part of Agree rather than the Agree-Link part. Then morphological case will not have any effect on SR, which involves Agree-Link only in B&CS's version.

individual languages one can stipulate that the SS C happens to be a subject-oriented anaphor; such elements certainly exist. But not all local anaphors are subject-oriented, so the question still arises as to why no (known) language has a C that is a plain anaphor and which therefore allows (50) with SS marking. In this way, a Finearan analysis would be like Arregi & Hanink's case-based one: it can handle individual cases, but it expects more crosslinguistic variation than has been observed.

In this work we have the tools to make the right prediction for these cases. Suppose that languages do not in general have special morphosyntactic structures for the CP complements of triadic verbs; triadic verbs select the same kinds of CP complements that dyadic verbs do.[28] Language learners of (say) Choctaw encounter examples with SR marking on complement clauses, such as (1a,b). Their innate knowledge of the PIC implies that this cannot be the result of Fin_{SR} in the embedded clause entering into Agree directly with the matrix subject as well as with the embedded subject, because two phase heads (Force and Voice) separate Fin_{SR} from the matrix subject. They infer, then, that the C-space of a complement clause licenses an SROp, which is the immediate goal of upward probing from Fin_{SR}. This SROp then falls under the principles of control theory, including the thematic role matching condition. Examples with dyadic verbs like 'think' and 'know' imply that the agent of the matrix verb can control SROp in the complement clause; SROp must then get an initiator role from the C-type head that licenses it, classifying it with Sp, lOp and SoK rather than with Ad and AdOp.[29] All this can be deduced without

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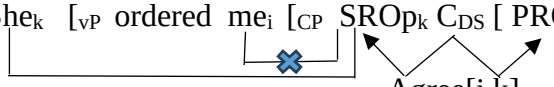
[28] Without this assumption we could get a pattern in which there is SR on adjunct clauses, no SR on complements of dyadic verbs (like in Washo), and "SS" on the complements of triadic verbs expressing an embedded subject=matrix object situation. Although this pattern is not ruled out explicitly by my theory, one might suppose that it would be hard to learn. When children see that SS is not present on the complements of dyadic verbs, they assume that it is not possible on CP complements across the board. CP complements of triadic verbs may not appear in the primary linguistic data in sufficient density to cause a child to acquire SR marking on complements based on evidence from them only.

[29] Also relevant to this is the fact that subject-like ghostly DPs are more common across languages than object-like ones, and AdOp, Ad, and OoK seem to depend on the existence of a corresponding subject-like operator but not vice versa. The unique subject=object switch-reference that Clem (2024) documents for Amahuaca might involve an object-controlled analog of SROp as well as the

ever observing an SR-marked CP that is the complement of a triadic verb. But thematic role matching implies that the agent of the triadic verb must be the controller of SROp in such a structure, rather than the goal-object of the verb—even if it is the goal-object argument that naturally controls a PRO subject of the embedded clause, if there is one (see Chapter 8 for discussion). Therefore, the matrix subject must be the antipivot for SR marking, not the matrix object. The reason is ultimately the same as why the matrix subject but not the matrix object controls upward C-agreement in African languages and why the matrix subject but not the matrix object can antecede logophoric pronouns and shifted 'I'. The structure is sketched in (51).

(51) She_k [$_{vP}$ ordered me_i [$_{CP}$ $SROp_k$ C_{DS} [PRO_i/pro_i go]]]



control $C_{DS:}$ i is the different from k

This core fact that SR tracks subjects not objects even when it appears in complement clauses is the key result that follows from the thematic conditions on the obligatory control of SROp.

This view makes potentially strong predictions about what counts as a matrix subject for purposes of different kinds of SR. It predicts that antipivot selection for SS/DS marking in complement clauses could be detectably different from antipivot selection for SS/DS marking in high adjunct clauses. I showed above that the antipivot for SR marking in Shipibo adjuncts is structurally defined: it is the DP in Spec TP. We saw that the thematic role of the subject has no direct effect on this, although NPs with certain thematic roles are of course more likely to merge into a position from which they can move to Spec TP. In contrast, SR marking on full CP complement clauses requires the control of a ghostly DP, and thematic roles influence this directly. Therefore, I predict that thematic roles should play a more important role in SR on complement clauses than in adjunct clauses.

Unfortunately, the opportunities to test this prediction based on the existing literature are rather sparse. For example, I predict that the oblique agent of a passive sentence in a language like Imbabura

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subject controlled version. That could be an attractive extension to the system, like OoK in Kipsigis or AdOp in Mupun, but I do not work this out here.

Quechua could count as the antipivot for SR marking on a complement clause, even though it does not count as an antipivot for SR marking on an adjunct clause (Jake 1985; see (23) and (24)). For instance, a hypothetical example like (52) could be possible, with the embedded verb bearing DS morphology because the oblique agent can control the SROp; then C_{DS} would use Agree to get indices from 'Maria' via SROp and from 'he' referring to Juan and it would be felicitious, the two indices being different. In contrast, if the derived subject with the theme role is the only possible controller of SROp, as in adjunct SR, then one should get only SS marking in (52).

(52) Imbabura Quechua (hypothetical)
Juan$_k$-TOP Maria$_i$ persuade-PASS be-3SG [SROp$_{i?}$ [he$_k$ Quito-to go-DS$_{[i,k]}$].
"Juan was persuaded by Maria that he should go to Quito."

Unfortunately, Jake, Hermon, and Cole do not discuss this interaction (see also Sterling 1993); I believe that all their examples of SR interacting with passive involve adjunct clauses. The test situation cannot even arise in Hopi (Jeanne 1978), Choctaw (Broadwell 2006: 124), or Washo (*WALS*), since these languages do not have syntactic passive constructions. Similarly, I predict that the oblique source phrase of a verb like 'hear' might function as the antipivot for SR in the CP complement of 'hear' but not in an adjunct clause modifying a hearing event. However, I do not know of any data that bears on this, and opportunities to test this may also be limited. For example, Broadwell (2006: 246) says that there is no source-marking preposition comparable to English *from* in Choctaw.

One area in which some relevant data is available involves experiencer arguments that do not also count as structural subjects. Such constructions are not rare crosslinguistically. The prediction is that such an experiencer argument might count as an antipivot for SR in complement clauses without counting as an antipivot for SR in adjunct clauses. Relevant to this is a somewhat peculiar-looking contrast in Imbabura Quechua discussed by Cole (1983). Recall that subjunctive SR-marked clauses can be used as complement clauses in this language, although indicative ones cannot be. Cole observes an odd-seeming use of SS marking in examples like (53a) and (54a). The subject of the matrix predicate 'be good' is a null expletive, and for 'be heavy' it is 'that bag'. Nevertheless, if the subject of the subjunctive clause is 'I' or generic 'one', SS marking is used, not the

expected DS.[30] In contrast, DS is required with an overt third person pronoun in the embedded clause, as in (53b) and (54b).

(53) Imbabura Quechua (Cole 1983)

*a. Ali-me [(ñuka) Juzi-wan parlaa-**ngapaj].***
be.good-EV I José-with speak-SS.SBJV
"It is good (for me, for one) to speak with José."

*b. Ali-me [pay Juzi-wan parlaa-**chun]***
be.good-EV he José-with speak-DS.SBJV
"It is good for him to speak with José."

(54) Imbabura Quechua (Cole 1983: 7-8)

*a. Chay kipi llashaj-mi ka-rka [(ñuka) apa-**ngapaj].***
that bag heavy-EV be-3SG.PST I take-SS.SBJV
"That bag was too heavy (for one/me) to carry."

*b. Chay kipi llashaj-mi ka-rka [pay/*ñuka apa-**chun].***
that bag heavy-EV be-3SG.PST he/*me take-DS.SBJV
"That bag was too heavy for him to carry."

My interpretation of this data along with Livia Camargo Souza (2020b) is that predicates like 'be good' and 'be heavy' in Imbabura Quechua select a null experiencer phrase, the one for whom something is good, or the one who judges/experiences the heaviness of the bag (cf. English *That bag was heavy for Mary, but not for Sue*). This null experiencer is interpreted as having generic reference, and in context it can include/amount to reference to the speaker (or the hearer), as "arb" arguments do in other languages. This is shown for English in (55).

(55) English (personal knowledge)

a. It is good (arb_i) [PRO_i to treat oneself$_i$ to a day off now and then].
b. It was good (for me$_i$) [PRO_i to treat myself$_i$ to a day off].
c. #It was good [PRO_i to treat herself$_i$ to a day off]. (needs

[30] The pronoun *kan* 'you' is also possible with SS marking in (53) and (54). This is expected in that "arb" readings often also include the addressee, as in *It was good (for you) [PRO to treat yourself to a day off yesterday]* (cf. (55)).

a clear discourse context)

The null experiencer argument in (53) and (54) can then control the SROp in the subjunctive CP complement. This is consistent with control theory, which accepts an experiencer as an initiator argument, hence the controller of an initiator-bearing ghostly DPs like SROp, as long as the matrix predicate does not also take an agent argument. Fin_{SR} in the complement clause then enters into Agree with SROp and the embedded subject. The SS version is possible if the two can be coreferential (or overlap in reference), as in (53a) and (54a). This accounts for the anomalous-looking SS marking seen in this example.

Importantly, Cole (1983) shows that a first person pronoun in an adjunct clause marked for SR does *not* trigger SS marking when used with these same matrix predicates. This is shown in (56).

(56) Imbabura Quechua (Cole 1983)
*[Ñuka ñan-pi puri-ju-**jpi**/*shpa] chay kipi llashaj-mi ka-rka.*
I road-in walk-PROG-DS/*SS that bag heavy-EV be-PST.3SG
"When I was walking in the road, that bag was heavy (for me)."

This fits the expectations of my theory. High temporal adjuncts cannot contain an SROp because they are not contexts that allow OC. Therefore, SR must proceed by direct Agree in this case. Therefore, the thematic role of the matrix arguments is not relevant, but only their syntactic position. The covert experiencer is clearly not the structural subject in Spec TP in these examples; rather 'that bag' is in (56). Fin_{SR} then finds as its goals 'I' and 'that bag'. Since these are not coreferential, only DS marking is felicitous. Here then is one case in which what qualifies as the antipivot for SR in complement clauses is different from what qualifies as the antipivot for SR in adjunct clauses in the predicted way. That is a point in support of my theory, as I hope for more data of this kind to come in.[31]

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[31] Another language in which this could be investigated is Choctaw. Davies (1986: 89) shows that a "dative" experiencer argument (recognized by the fact that it triggers indirect-object-type agreement on the verb) can count as the antipivot for SR marking on a complement clause (see also Broadwell 2006: 274), as predicted. The open question is whether dative experiencers can also count as antipivots for SR marking on an adjunct clause. I did not find any examples of this sort in Davies (1986) or Broadwell (1990, 1997, 2006). The prediction is

7. Conclusion

In this chapter, we have seen that SR is another "weird thing that Cs do to relate to the DPs around them." It is like indexical shift and logophoricity in that the C relates both to a DP in the matrix clause (the antipivot) and one in the embedded clause (the pivot). In this context, I asked whether SR falls under the same sort of UG analysis as the other rare constructions studied in this work: does it involve a null operator in the periphery of the embedded CP that can be controlled by an argument of the matrix verb and that C can enter into agreement with?

I have argued that the answer to this question is a resounding "Sometimes." Practically all SR languages allow SR marking on high adjunct clauses. These are not contexts of obligatory control, and indeed the other rare constructions under study are typically not possible in such adjunct clauses. This sort of SR happens by direct Agree of the embedded C with the matrix subject. That analytic conclusion is confirmed by the fact that what counts as the matrix subject is determined in purely structural terms, being sensitive to processes of like DP movement. This direct Agree type of SR also extends to restructuring constructions in Shipibo and Yawanawa.

However, there is good reason to say that the direct Agree type of SR is not possible on full CP complements, where it is blocked by the PIC. This explains why SR is not possible in full complement clauses even when it is possible on adjunct clauses in Washo, Shipibo, Yawanawa and other languages. When a language does allow SR on full CP complements, I claim that this is the result of an operator-licensing-plus-OC structure, where the null operator bridges the distance between the matrix subject and the embedded C head. In some of the relevant languages, it is clear morphologically that SR complements have an additional C-like head which plausibly introduces this Op. Control theory then applies to this subset of SR constructions in the usual way. In particular, it explains the fact that the matrix agent-subject is the antipivot for SR marking on the complement of a triadic object-control type verb, not the goal-object—a robust generalization that has not been well-explained by

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also affected by the fact that dative experiencers in Choctaw might count as structural subjects, as they do in Icelandic; they are, for example, marked with nominative case even though they trigger dative agreement (Davies 1986: 88).

previous generative theories. This two-pronged analysis of SR then predicts that the thematic roles of the matrix arguments will influence SR in complement clauses in a way that is not typical for SR in adjunct clauses. It will be a challenge to find just the right languages and constructions to test this hypothesis systematically, but the predictions are clear and one piece of evidence from Imbabura Quechua has been found in its favor.

The fact that some SR constructions use the same UG infrastructure as logophoric, indexical shift, and C-agreement constructions is an important win for the view about UG that informs this work. In the introduction, I asked why crosslinguistically rare constructions are possible given a substantive notion of UG. The hypothesis is that the same structural elements can be used for different surface functions in different languages, much as the structural element of a forelimb is used for different functions by different mammal species. Upward C agreement and dedicated logophoricity are known only in Africa. In contrast, indexical shift and allocutivity are found in a smattering of languages throughout Eurasia (and beyond). Including SR in the picture extends the coverage to the Pacific Rim, as it is found in languages of North America, South America, Australia, and New Guinea. It is relatively rare for a language to have any particular construction from this family, and each construction has a somewhat narrow distribution. But it is not (as) uncommon for a language to have one or two constructions from this family, and languages that have something of the sort are distributed widely along the globe. Just as are mammals that have some kind of forelimb.