Chapter 7
Switch reference inside and outside complement clauses

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7.1 Introduction

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As mentioned back 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 if its subject is coreferential with the subject of the immediately superordinate clause, and a contrasting kind of morphological marking if its subject is not coreferential with the subject of the superordinate clause.[1] The morphological marking generally shows up as an outer affix on the embedded verb or as a particle following it that is at or near the edge of the embedded clause. As such, it is reasonable to say that these markers are realizations of a head in or near the C-space. Therefore, SR qualifies as "something crosslinguistically unusual that C does to relate to the NPs around it" and as such it fits with the informal extensional topic of this work. It is less obvious whether it fits in theoretically in that it draws on the same UG infrastructure involving the control of null DP operators at the periphery of an embedded clause, with some considerations pulling both ways.

The view that I argue for is that SR fits into this profile in part. SR-marked adjuncts often do *not* involve the licensing and control of ghostly DP operators, nor do SR-marked auxiliary constructions. However, it is precisely the possibility of a CP complement containing controllable DP operators that allows them to participate in SR in a subset of the languages that have an SR system. In that subdomain, Generalized Control Theory bears some good fruit, in that it can explain something about the use of SR marking in the complements of triadic verbs that has been problematic for virtually every generative theory to date. This leads to some predictions about how SR on complement clauses might behave a bit differently from SR on adjunct clauses that could stimulate future work on this topic.

7.2 The distribution of SR marking

The core of a canonical SR system is morphologically marking "same subject" (SS) versus "different subject" (DS) on an embedded clause. (1) gives a contrasting pair from the Muskogean language Choctaw (Broadwell 2006), a language in which SR is found on a particularly wide range of embedded clauses, including complements. 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 -*t*. This is the SS case. In contrast, 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

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[1] More generally, one should say something like SR marking shows whether the subject of the embedded clause is referentially dependent on the subject of the matrix clause, because quantified nominals and other nonreferential DPs can participate in SR on a par with referential ones. See McKenzie (2012) and Camargo Souza (2020: ch 5) for some discussion.

(1b), then the embedded verb bears a different suffix *-N* (realized as nasalization on the preceding vowel).

(1)   a.   [Pisachokma-ka-t] ikhána-h.   (Broadwell 2006: 264)
                handsome-C-SS   know-TNS
                'He$_i$ knows that he$_i$ is handsome.'

        b.   [Pisachokma-ka-N]   ikhána-h.   (Broadwell 2006: 264)
                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)

    My road into aspects of this topic is considering the distribution of SR across clause types. The fact that Choctaw allows SR on complement clauses makes it a little bit like upward C-agreement, shifted allocutive marking, indexical shift, and logophoricity, all of which take place in complement clauses in relevant languages. Moreover, most of these phenomena can go a bit beyond complement clauses, in that they can take place in low adjunct clauses too, especially purposive clauses. On my view, purpose clauses are like complement clauses in merging with a projection of the verb, which makes them contexts of obligatory control, in accordance with the GOCS. And indeed purposive clauses also allow SR marking in Choctaw and many other languages. (2) gives a basic pair (note that SS has the allomorph *-sh* after *-o*).

(2)   a.   [Palláska' ikbi-l-aachi̲-h-oo-**sh**]   bótta' cho̲pa-li-tok.   (Broadwell 2006: 288)
                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.'(Broadwell 2006: 288)

This suggests that there could be some role for ghostly DP operators and Generalized Control Theory to play in the analysis of SR. On this view, an operator at the edge of the embedded clause—call it SROp—is controlled by the matrix subject. Then SS marking indicates that SROp is coreferential with the subject of the embedded clause, and DS marking indicates that SROp is not coreferential with the subject of the embedded clause.

    Following a vein of recent work developed by several research teams independently, I assume that SR fundamentally involves multiple Agree on the part of a C-like head in the embedded clause (Baker and Camargo Souza 2020, Camargo Souza 2020, Arregi and Hanink 2022, Ikawa 2022, Clem to appear).[2] For concreteness, I adopt Ikawa's (2022) version.

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[2] And 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 just such a relationship, on 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.

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 SR Cs enter into Agree with the closest DP probing downward and with the closest DP probing upward, copying their referential/binding indices. The closest DP probing downward is generally the subject of the embedded clause; following McKenzie (2012), I call that embedded clause DP the *pivot* of the SR construction. The closest DP probing upward will be the SROp in the specifier of some C-like head, on the assumption that there is one (see below for other possibilities). SROp is in turn controlled by the matrix subject, so it shares its binding index; following McKenzie, I call that matrix clause DP the *antipivot* of the SR construction. The SR Cs then end up with two indices: one from the embedded subject and one from the matrix subject by way of SROp. 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.[3] On this view, (1a,b) have the syntactic representations in (3a,b), respectively.

(3)　　a.　　[pro$_i$　[$_{VP}$ [SROp$_i$ [pro$_k$　be.handsome] C$_{SS}$]　know]　T]
　　　　　　　|_control_|　|_____|_____Agree_____|[i,k]
　　　　　　antipivot　　　　　*pivot*　　　　　　　　C$_{SS}$(i,k)=i is the same entity as k

　　　　b.　　[pro$_i$　[$_{VP}$ [SROp$_i$ [pro$_k$　be.handsome] C$_{DS}$]　know]　T]
　　　　　　　|_control_|　|_____|_____Agree_____|[i,k]
　　　　　　antipivot　　　　　*pivot*　　　　　　　　C$_{DS}$(i,k)=i is not the same entity as k

　　　This is the version of an Agree-based analysis of SR that maximizes its similarity to the other constructions in this work. Here antipivot selection is basically identical to how upward C-agreement works in the African languages; SR simply adds downward Agree from C (as seen overtly in languages like West Flemish) into the mix, and uses a form of Agree that copies index features rather than phi-features. I argue that the analysis in (3) is valid for a subset of SR constructions.

　　　However, the broader distribution of SR poses several significant challenges for this operator-control-plus-Agree view, showing that this is not the only UG structure for SR constructions. The challenges can be seen both internally to a single language like Choctaw and across languages. For example, high TP-level adjuncts also show SR marking in Choctaw. This includes conditional clauses, causal adjuncts, and temporal adjuncts, as seen in (4)-(6).[4]

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[3] See Ikawa (2022) for several other constructions in which a functional head with a substantive lexical 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 treat DS as the default/elsewhere case when SS marking cannot be used. There is excellent evidence that this is true for DS in the Panoan languages that B&CS had primarily in mind, but it may not generalize to languages like Washo, where DS is morphologically marked and SS is not. I want to bracket off the issues of overlap in reference and which SR marker is the elsewhere case for future work, so as to concentrate here on issues of what clauses can be marked for SR and which nominals the SR markers are sensitive to. Ikawa's view allows us to do that conveniently.

[4] There was not an obvious DS analog with *-hma* in Broadwell. Many temporal sequence examples use *-cha* vs. *-na*, but those have a different kind of morphology, without separate morphemes for C and SR.

(4) 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.' (Broadwell 2006: 292)

(5) a. [kaah sa-nna-**haatokoo-sh**], iskali' ittahobli-li-tok. (AB: 263)
         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. (AB: 263)
         car want-because-DS money save-1SG-PST
         'Because he wanted a car, I saved money.'

(6) [Mihmat iskáli' oklah i-taha-h fókkaali-**hma-t**], alikchi-t iskáli' kaniimi
     and.when money PL 3.DAT-complete-TNS about-when-SS doctor-PTCP money some
     ittahobbi-hma-t okla miti-ttook.
     gather-when-SS PL come-DPST
     'And when they_i were about out of money, they_i earned some money by doctoring, and
     came.' (AB: 283)

I have argued that these sorts of adjunct clauses are not contexts of obligatory control. And
indeed most 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.

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

(7) a. Jose=ra [(pro) Rosa oin-**ax**] xobo-n ka-ke. (Shipibo, fieldnotes)
         José=EV (he) Rosa.ABS see-SS.PFV.ABS house-LOC go-PFV
         'When he_i saw Rosa_j, 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_j, he_m/she_k (someone else) 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 in no way anomalous in allowing SR on high adjunct
clauses. Shipibo also has SR marking on purposive adjuncts, as in (8).

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(8) a. E-a-ra   ka-ai,   [oa joni-bo   osan-**no-x**].   (Valenzuela 2003: 423)
       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 CP complements are not marked for SR in Shipibo (Valenzuela 2003: sec. 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) a. Jose-kan [*pro* Rosa kena-ti] shinan-ke.   (fieldnotes)
       José-ERG (he) Rosa call-INF   think-PFV
       'José thought to call Rosa; José thought he would 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).

  Indeed, languages like Shipibo seem to be at least as common as languages like Choctaw in this regard. 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 clause. Other languages that have SR marking on adjunct clauses but not complement clauses include Kiowa, Seri, Ute, 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 phenonoma, which are possible in (a subset of) adjunct clauses only if they are possible in complement clauses.

  We see, then, that although the range of structures that allow SR can overlap with the range of structures that allow logophoric and indexical shift phenomena, the overall characters of their distributions are quite different. In this chapter, I consider why this should be. I argue that SR constructions do not need to have a null operator. When they do not have one, C can enter into Agree directly with the matrix subject. This is the situation in languages like Shipibo, where SS marking is possible on adjunct clauses, as well as in some auxiliary/restructuring constructions, but not on complement clauses more generally. However, some languages also permit an SR construction to have a ghostly DP operator in the C-space. These languages do

allow SR marking on complement CPs: the ghostly DP bridges the gap between the embedded C and the matrix subject, being close enough to C for C to enter into Agree with it and close enough to the matrix subject to be controlled by it. This is the case in Choctaw and other languages like Hopi, Washo, and Imbabura Quechua. Moreover, in the subset of languages that allow ghostly DPs in SR constructions, the principles of Generalized Control Theory apply to determine what controls the SROp, explaining a striking property of SR in complement clauses that has resisted explanation in other generative accounts but is clearly parallel to what we have seen in the various logophoric-type constructions considered in this work. The account also has something to say about why SS marking is possible in some complement clauses but not others in languages like Shipibo and Washo.

7.3 Evidence for direct Agee in adjunct clause SR

I start by fleshing out the evidence 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. Then it would have to undergo OC, as must other ghostly DPs that do not have intrinsic interpretable phi-features. I assume that SROp, if it exists, does not have intrinsic phi-features because there are no featural restrictions on the DPs that can control it, or on DPs that it binds in the embedded clause. This is clear and uncontroversial when it comes to the standard phi features of person, number and gender. 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. Among others, Finer (1984) observed this, using it as an argument against the view that SR exists only for the functional reason of disambiguating sentences that would otherwise be ambiguous. For example, (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) a. Chi-sso-ka-**t**   ikhą́na-li-h.   (Broadwell 2008: 282)
          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? (AB: 269)
          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. So there is no reason to say that an SROp has any fixed intrinsic nominal features. This then implies that SROp would need to undergo obligatory control in order to receive features so that it can be interpreted at the LF interface, like the SoK found in upward C-agreement constructions and the LogOp found in logophoric constructions, but different from the Sp of indexical shift and the zOp of LD anaphoric constructions in Japanese, 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 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 that binds LD anaphors in Japanese is [+empathy]. Then the SROp in high adjunct clauses could potentially undergo some form of NOC. This hypothesis 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 contained in 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: sec. 10.2).[5] And 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: Have you seen Mary lately?   (or Mary, have you seen her lately?)
        B: Yes, she came-SS yesterday on the evening train.

There is nothing incoherent about this pattern, and I am not sure that nothing like it ever happens in languages of the world, but it is not how Shipibo works, or the other better-studied languages of the Americas.[6] 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, where the subject (or some other highly prominent DP) of a higher clause

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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: sec 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 (2008: 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 is it subject to obligatory control.) I conjecture that SR marking is never possible in languages that only have relative clauses with unambiguous external heads.

[6] The potentially tricky empirical point here is that it is not always clear and uncontroversial whether a reference-marked clause is syntactically a subordinate clause or not. This has been challenged especially 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.

functions as the antipivot for SR marking, rather than the subject of the immediately superordinate clause. For NOC control of the PRO subject of an infinitival adjunct in English, this is possible; see Landau (2021) for much 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)   a.   Mary$_i$ was upset because [[after PRO$_i$ perjuring herself$_i$ for his$_k$ sake] John$_k$ should have been more grateful].
       b.   Mary$_i$ was upset because [[after PRO$_k$ perjuring himself$_k$ at the first hearing] John$_k$ 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 and Hanink (2022)).[7] Kashibo has two very useful properties for studying this 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 first the example in (13). Here SS marking on the first verb 'eat' can either have the ergative form agreeing with the (null) subject of the second verb, transitive 'drink', or it can have the nominative form agreeing with the (null) subject of the matrix verb, intransitive 'run'.

(13)   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.' (Zariquiey 2011: 564)

Putting aside a subtle 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 'John' or the higher subject 'Mary' 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)   a.   [*pro* Pi-tankëx-(*un)]   kana   [[*pro* xëa-i]   *pro*   abat-a-n].
           eat-SS.PFV-(*ERG)   NAR.1SG   drink-SS.IPFV.NOM   run-PFV-1/2
           'After eating, I ran drinking.'   (Zariquiey 2011: 565)

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[7] However, the crucial example in Arregi and Hanink's (2022) argument for the 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].
        eat-SS.PFV-*(ERG)   drink-SS.IPFV.NOM NAR.1.SG   run-PFV-1/2
    'Drinking after eating, I ran.'   (Zariquiey 2011: 566-567)

(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', as PRO is in (12a) from English. (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 clause attached directly to the matrix 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 that we would expect if the most deeply embedded clause had a 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 in this context.

   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 like (3) but rather (15).

(15)   a.   [Jose$_i$ [$_{CP}$ [pro$_k$ Rosa see] C$_{SS}$] [$_{VP}$ house-to go] T]
                    |_____|_____Agree____|
                                        C$_{SS}$(i,k)=i is coreferential with k

       b.   [Jose$_i$ [$_{CP}$ [pro$_k$ Rosa see] C$_{DS}$] [$_{VP}$ house-to go] T]
                    |_____|_____Agree____|
                                    C$_{DS}$(i,k)=i is not coreferential with k

And 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 and Hanink (2022), Clem (to appear), and Ikawa (2022).[9]

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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 and Hanink (2022) give a couple of arguments about why this does not work so well for SR in Washo, including the presence of SR on complement clauses. Similarly, Clem's version does not work so well for SS marking on the complements of aspectual verbs in Shipibo and Yawanawa either.

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 or so.[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 for 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)   Ketxa pake-ashe   muxi-a.   (Yawanawa, Camargo Souza p.c.))
        plate   fall-SS.PFV.NOM break.INTR-PST.PFV
        'The plate fell and broke.'

Relatedly, it is perfectly possible for the antipivot of an SR construction to be an inanimate DP, whereas this is impossible or restricted in upward C agreement constructions in the African languages (see chapter 2) and at least some logophoric constructions.

        Very instructive in this respect is comparing two kinds 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, for example, in the fact that it is the experiencer argument that triggers third plural agreement on the verb in (17), even though both arguments have absolute case.

(17)   a. **Joni-bo-ra**   kenti keen-**kan**-ai.   (fieldnotes)
            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 class of predicates that provides a near-minimal comparison with this one is 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 not. 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/assume that the same is true in this language.)

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[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 some discussion. I assume that this extraposition happens after the upward Agree relation has been established (contrast Clem (to appear), who argues that the CP adjunct starts out above the subject).

(18)   a. Bake-n-ra   Rosa isin-xon-ai.   (fieldnotes)
           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 this, the prediction of the direct Agree approach to adjunct SR is that the experiencer argument will behave as the antipivot for adjunct SR 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)   a. Saweti oin-ax-a,   Rosa   ja   keen-ai.   (fieldnotes)
           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)   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* [see dress]] [$_{VP}$ t$_i$ [want it]]]
               |_____|____|.**Agree**

       b. my monkey$_i$ T [C$_{SS}$ *pro* [eat bad-fish]] [$_{ApplP}$ (P+)me [$_{VP}$ die t$_i$]]]
                  |_____|___|.**Agree**

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 clearly which argument moves to Spec TP that is the deciding factor here, in accordance with 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 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 well, as in (22).

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

Similarly, see Hermon (1985: 125) for examples of the quirky-accusative bearing 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 happens to have 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), and conversely that the agent argument/thematic subject of a passive cannot be the antipivot.[13]

(23) 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.   (Jake 1985: 59)
child come-DS-TOP dog   he-EMPH-ACC bite-3.PST-EV
'When the child$_i$ came, the dog bit him$_i$.'

(24) a. Milma-ta randi-shpa-mi taita   ruwana-ta   awa-rca.   (Jake 1985: 60)
wool-ACC buy-SS-EV   father poncho-ACC weave-3.PST

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[11] For example, the experiencer controls PRO in (i) and the benefactee does in (ii) in English.

(i)   Mary$_i$ remembered a sandwich [PRO$_i$ to eat for lunch].
(ii)   I made Mary$_i$ a sandwich [PRO$_i$ to eat for lunch].

[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 and Camargo Souza (2020b) 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 and Camargo Souza (2020b) for a brief discussion.

'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 with adjunct clauses contrasts in this respect with indexical shift in Magahi and LD anaphora in Japanese, where Sp and zOp can be controlled by a passive agent. I also argued in chapter 2 that passive agents can control SoK in (say) 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 constructions. 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, contrasting with its unraised counterpart in (25a) in all three respects.

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

     b. John-at (piláashaash) ofi-yat im-illi-h. (raised possessor)
        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 pivot for SS marking on the 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 probing upward from the middlefield of the clause.[15]

(26) Jan-at ofi'-at im-ambiika-tok [sa-kisili-tokat]. (Broadwell 1990: 231)
     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 earlier chapters of this work. The differences are of two kinds: SR is widely possible in high adjunct clauses, and the matrix element that participates in the structure is the DP in Spec TP, not the DP that is associated with the most-

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[14] This 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, even when the possessor is raised. 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 in Spec TP is selected as the antipivot.

agent-like thematic role. These differences show that a direct Agree account is warranted for antipivot selection with adjunct clauses, rather than an operator-control analysis.

7.4 Direct Agee and adjunct-complement differences

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 a single language in Washo, based on work by Arregi and Hanink (2022) and Bochnak and 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) a. [Mé:hu ʔ-élšɨm-aʔ-**Ø**] *pro* ʔ-émc'i-gaʔlám-é:s-i   SS (A&H: 685 (60b))
          boy   3-sleep-DEPT-SS pro 3-wake.up-want-NEG-INDEPT
          'While the boy's sleeping, he doesn't want to wake up.'

      b. [L-emlu-aʔ-**š**]   ʔ-imeʔ-leg-i.   DS (B&H: 993 (39))
          1-eat.in-DEPT-DS 3-drink-REC.PST-IND
          '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, notably 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 always bears a null marker in this context (which happens to look like the SS marker).[17] This pattern is seen in constructions with verbs with meanings 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 examples in (28c,d).

(28) a. Béverli [démlu di-beguweʔ-e:s-aʔ] Ø-hamu-i.   (B&H: 980 (2))
          Beverly good 1/3-buy-NEG-DEPT   3-think-IND
          '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 DS -*š* (B&H: 984 (14))
          1-play-go.out-hence-FUT-DEPT 3-say-INDEPT
          'She said I could go play.'

      c. Géwe   [Ø-dotig-ha-aʔ]   Ø-hamu-aʔ.   SS = DS (B&H: 993 (42))

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[16] Bochnak and 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.

coyote   3/3-burn-CAUS-DEPT 3-think-DEPT
'Coyote thought that he burned him [the lizard] to death.'

    b.   [Di-yᵉ-iʔiš-aʔ]   di-gum-suʔuʔuš-iʔ-i   SS = DS (B&H: 984 (15))
        1-fly-forward-DEPT 1-REFL-dream-ATTR-INDEPT
        'I dreamt that I was flying.'

Bochnak and Hanink (2022: 993 (40)) also cite the minimal pair in (29), which confirms that the argument/adjunct distinction correlates with the SR/no-SR distinction.
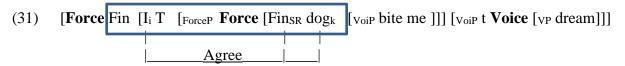
(29)   a.   [Sukuʔ le-git'i-aʔ]   di-gum-suʔuʔuš-leg-i.
          dog   3/1-bite-DEPT 1-REFL-dream-REC.PST-IND
          'I dreamt that the dog bit me.'   (Complement, no DS marking)

    b.   [Sukuʔ le-git'i-aʔ-š]   di-gum-suʔuʔuš-leg-i.
          dog   3/1-bite-DEPT-DS-ds 1-REFL-dream-REC.PST-IND
          'I was dreaming while the dog bit me.'   (Time adjunct, DS marked)

      The question arises, then, why is SR marking not possible on this kind of complement clause, even though this language demonstrably has the morphosyntactic tools it needs to express this. 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.
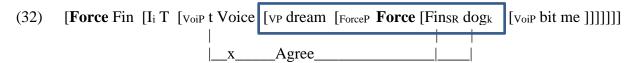   This can be done, I claim, by combining the Direct Agree hypothesis with Chomsky's (2001) Phase Impenetrability Condition (PIC), given that Voice is a phase head. The logic of derivation by phases implies that C in a complement clause can only enter into Agree with the subject of the matrix clause if it is in the representation at the same time as that subject—if it has not already been shipped 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 at the introduction of the next phase head.

(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 of 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, canonically 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 what 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 **Voice** [$_{VP}$ dream]]]

                        | | |
                    |_____Agree_____|____|

In contrast, a complement clause is contained inside VP, and therefore it is in 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. The structure for (29a) is sketched in (32).

(32)   [Force Fin [Ii T [VoiP t Voice [VP dream [ForceP **Force** [FinSR dogk [VoiP bit me]]]]]]]]
            | | |
            |__x_____Agree_____|____|

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 Voice head separating the two that could count as a phase head.

This Direct Agree analysis 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—e.g. not on the inifinitival complement of 'think' in Shipibo (see (9)), or on clauses headed by so-called participle verbs ending in -a (perfective) or -ai (imperfective) (see Valenzuela 2003: 491-494). However, Shipibo has a handful of verbs that do allow SS marking on their complement— namely aspectual verbs like 'begin', 'stop' and 'finish' (Valenzuela 2003: 319-322, 588-590). Examples are given in (33). Note that DS marking is not possible with these verbs, because they are raising/control type verbs such that the understood subject of the complement of 'begin' is always the same as the subject of 'begin' 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 we have real SS marking in this construction, not just a frozen form that is derived historically from SS marking.[19]

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[18] Bochnak and Hanink (2021) actually argue that nonfactive clauses in Washo are adjuncts adjoined very 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 in the spell out domain triggered by the phase head Voice. Therefore 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. In these terms, we do not have a contrast between (high) adjuncts and complement clauses, but rather a contrast between high adjunct clauses and low adjunct clauses. However, I do not find B&H's syntactic evidence that nonfactive clauses in Washo are low adjuncts rather than complements to be completely convincing, so I stick to the more familiar view that the CP in construction with verbs like 'say' and 'think' is its complement.

[19] Note that 'start' 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 consider that version here.

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 basically a kind of auxiliary construction, where V takes a VP complement. There are, however, some differences of morphological detail, and I do not discuss those here either.

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

(34) 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-CAUS.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 particular class of verbs, but not more generally.

My answer, following Baker and Camargo Souza (in press), is that what is special about aspectual verbs is that they are *restructuring* verbs—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 (e.g. see Burzio (1986: 324), Wurmbrand (2003)), taking "reduced" (small) complements more often than not across languages. There is some 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' which would 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 verb, 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
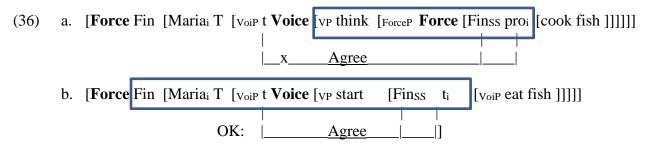
ergative, because its clausal complement as a whole counts as nominal in Shipibo (Valenzuela 2003: ch. 10).

(35) a. Maria-nin-ra/*Maria-ra   bewa-ti shinan-ke.   (fieldnotes)
          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 Finss 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 a full CP complement is repeated in (36a); it can be contrasted with the structure for a reduced restructuring complement in (36b).

(36) a. [**Force** Fin [Maria$_i$ T [$_{VoiP}$ t **Voice** [$_{VP}$ think [$_{ForceP}$ **Force** [Fin$_{SS}$ pro$_i$ [cook fish]]]]]]
                                            | | |
                                            |__x_____Agree_____|____|

      b. [**Force** Fin [Maria$_i$ T [$_{VoiP}$ t **Voice** [$_{VP}$ start   [Fin$_{SS}$ t$_i$ [$_{VoiP}$ eat fish]]]]]
                                            | | |
                             OK: |_____Agree____|____|]

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, Finss and the matrix subject *Maria* are contained in the same spell out domain, and Finss 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 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*. As a result, cognitive verbs like 'know' are forced to 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—very similar to the aspectual verb construction. Other verbs in this class in Yawanawa have the meanings 'forget,' 'dream', and 'think' (Camargo Souza 2020: 120).

(37) 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 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 again 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, then, 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!

7.5 When SR is possible on CP complements: Enter SROp

But now what do we make of the fact that SR is possible on the full CP complements of verbs in some other languages, such as Choctaw? Why aren't all languages like Shipibo and Yawanawa in this respect? We do not expect substantial variation in the PIC, and while there is possible variation as to what is a phase head, some C-like head or other always counts, it seems.

Again, language-internal comparison in Washo gives valuable clues here. 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 there is a second very relevant comparison to make in Washo: we can compare nonfactive clausal complements (a pair is repeated in (38) for convenience) with so-called factive clauses in Washo (Bochnak and Hanink 2022). Factive complement clauses are marked for SR, using the same contrast between -Ø (SS) and -*š* (DS) morphology 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)   a. Béverli [démlu di-beguweʔ-eːs-aʔ] Ø-hamu-i.   (B&H: 980 (2))
            Beverly good   1/3-buy-NEG-DEPT   3-think-IND
            'Beverly thinks that I didn't buy food.'   (no DS -š)

       b. Géwe   [Ø-dotig-ha-aʔ]   Ø-hamu-aʔ.   (B&H: 993 (42))
            coyote   3/3-burn-CAUS-DEPT 3-think-DEPT
            'Coyote thought that he burned him [the lizard] to death.'   (SS = DS)

(39) a. Adele [*pro* daláʔak ʔ-íːgi-yi-Ø-ge]   hámup'ayʔ-éːs-i. (A&H: 653 (2))
         Adele   *pro* mountain 3/3-see-INDEPT-SS-NM.ACC 3/3.forget-NEG-INDEPT
         'Adele_i remembers that she_i saw the mountain.'

     a. *Pro* [Adele dimeʔ súːbiʔ-i-š-ge]   di-hámup'ayʔ-éːs-i.
         Pro   Adele water   3/3.bring-INDEPT-DS-NM.ACC 1/3-forget-NEG-INDEPT
         'I remember that Adele brought the water.'   (A&H: 652 (1))

     c. [Ø-haʔaš-ayʔ-i-š-ge]   di-hamup'ay-i.   (B&H: 980 (1))
         3-rain-PST-INDEPT-DS-NM.ACC 1/3-forget-INDEPT
         'I forgot that it rained.'

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

There is another clear structural difference 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 and Hanink 2022).[20] Correlated with this is the fact that the mood marker in 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, factives are augmented clauses, with an extra head that could count as a phase head, rather than reduced clauses without a phase head.

Instead, I claim 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 20) licenses a controllable Op—SROp—in the periphery of the CP. As such, *ge* in Washo is akin to *-li* in Lubukusu (Diercks 2014), *dep* in Uyghur (Sudo 2012), or *be* in Ewe (Clements 1975), which license the controllable operators SoK, Sp, and LogOp (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, 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 given in (40b). This can be compared with the structure of a nonfactive complement in Washo in (40a) (repeated from (32) above).

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[20] This view is very likely a bit of a simplification. Bochnak and 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 and 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). So 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 and Hanink, *ge* is technically an Index head.) I suppress these details to concentrate what is essential to my proposal.

(40) a. [**Force** Fin [I$_i$ T [$_{VoiP}$ t **Voice** [$_{VP}$ dream [$_{ForceP}$ **Force** [Fin$_{SR}$ dog$_k$ [$_{VoiP}$ bit me]]]]]]]

|__x_____Agree_____|____|

b. [**Force** Fin [Adele$_i$ T [$_{VoiP}$ t$_i$ **Voice** [$_{VP}$ remember [SROp$_i$ **C** [Fin$_{SR}$ pro$_i$ [$_{VoiP}$ see mtn]]]]]]

|_____control_____| |_Agree_|____|

The intuitive idea here is that control of SROp bridges the distance between the matrix subject and the SR head, so 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. It is by taking advantage of this possibility that some languages have SR on the complements of (some) nonrestructuring verbs. The parameter here consists of simply 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.

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 view, 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 at PF between adjacent functional heads, and similar morphological complexities. Another language that goes in the same direction 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 morphology 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 nominalizing) head *-qa* plus the SR marker, which appears outside it. This morpheme *-qa* also conditions different allomorphs of the SR markers: in this context, SS shows up as *-y* and DS (confusingly) as *-t*. I take this variation to be a simple case of morphologically conditioned contextual allomorphy, handled by late lexical insertion at PF.

(41) a. Mi' taaqa noes-**t** (puu') (pam) puwto.   (Hale 1992): 52 (3))
          that man eat-SS then   he   sleep   (Hopi adjunct SR)
          'That man ate and (then) (he) went to sleep.'

b. Pam wu'ti noes-**q** (puu') mi' taaqa pitu.   (Hale 1992: 53 (6))
          That woman eat-DS then   that man arrive
          'That woman ate and (then) the man arrived.'

(42) a. Nu' 'as [-- kweewa-t tu'i-ni-*qa*-**y**]   naawakna. (Hale 1992: 51 (1))
          I   PRT   belt-ACC buy-FUT-C-ACC.SS want   (Hopi complement SR)
          'I want (me) 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.'   (Hale 1992: 53 (5))

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.

(43) 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.'   (Cole 1983: 5)

      b.   Juzi Utavalu-man chaya-**jpi**, paypaj wasi-man ri-rka-ni.   (IQ)
            Jose Otavalo-to   arrive-DS   his   house-to go-PST-1
            'When José arrived in Otavalo, I saw his mother.'   (Cole 1983: 5)

But IQ also has innovative SR marker on subjunctive clauses. These subjunctive clauses can function as purpose clause adjuncts, as in (44), but they can also be used as CP complements of verbs like 'want', as in (45) (Hermon 1985: 30, Cole 1985: 37).

(44)   a. Utavalu-man shamu-rka-ni ñuka mama-ta   visita-**ngapaj**.   (IQ)
            Otavalo-to   come-PST-1   my   mother-ACC visit-SS.SBJV
            'I came to Otavalo to see my mother.'   (Cole 1983: 6)

      b. Juzi-ta   Utavalu-man kacha-rka-ni paypaj mama-ta   visita-**chun**.   (IQ)
            Jose-ACC Otavalo-to   send-PST-1   his-POSS mother-ACC see-DS.SBJV
            'I sent Juan to Huaraz to see his mother.'   (Cole 1983: 6)

(45)   a. [Juzi pay-paj   mama-ta   riku-**chun**] muna-ni.   (IQ)
            José his-POSS   mother-ACC see-SBJV.DS   want-1
            'I want José to see his mother.'   (Hermon 1985: 30)

      b. [PRO pay-paj   mama-ta   riku-ngapaj] muna-ni.   (IQ)
            PRO his-POSS mother-ACC see-SBJV.SS   want-1
            'I want to see his mother.'   (Hermon 1985: 30)

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 that it is 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, the whole complex of morphemes being used in both SS and DS contexts in non-Equadorian varieties like Ancash Quechua (AQ), as shown in (46).

(46) a. Huaraz-ta   shamu-rqu-u [mama-nii-ta   rkaa-**na-a-paq**].   (AQ)
         Huaraz-ACC come-PST-1   mother-my-ACC see-SBJV-1-SBJV
         'I came to Huaraz to see my mother.'   (Cole 1983: 4)

      b. Fuan-ta   Huaraz-ta   kacha-rqu-u [mama-nin-ta   rkaa-**na-n-paq**].   (AQ)
         Juan-ACC Huaraz-ACC send-PST-1   mother-his-ACC see-SBJV-3-SBJV
         'I sent Juan to Huaraz to see his mother.'   (Cole 1983: 4)

The two syllables in the complement SS marker -*ngapaj*, then, is plausibly a hint to IQ learners that there is an extra C head in SR-marked complements that is not necessarily present in SR marked adjuncts. Again, 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.[21]

7.6 Thematic effects of control in SR on 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 logical next step, then, 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 will hamper us somewhat, forcing me to leave some predictions for future research.
      A 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 a range of the languages we have been considering, including Hopi, Choctaw, IQ, and Washo. Examples are shown in (47).[22]

(47) a. Taaqa   tiyo-t   [*pro* kaway-mu-y   'oyato-ni-qa-**t**]   'ayata. (Hopi, Hale 1992: 67)
         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,* ss).

      b. Iya-l-aachi̱-h-**o-N**   a̱-maka-tok.   (Choctaw, Broadwell 2008: 273)
         go-1SG-IRR-TNS-PTCP-**DS** 1SG.DAT-say-PST
         'She ordered me to go.' (not -*oo-sh* **SS**)

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[21] 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* vs -*cha*. However, Choctaw has plenty of adjunct clauses that have the form C+*t/N* as well, so this more articulated morphological structure does not automatically mean that there is an Op there (it depends upon the C).

[22] 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 here the embedded subject is different from the matrix object as well, so DS is expected whatever C$_{SR}$ chooses as the antipivot. Arregi and 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/object, 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.

c. Juan-da   kunvinsi-rka-ni   [(pay)   Kitu-man   ri-**chun**].   (I. Quechua)
   Juan-ACC   persuade-PST-1SG   he.NOM   Quito-to   go-SBJV.**DS**
   'I persuaded Juan (that) he go to Quito.'   (not *ri-ngapaj*, Hermon 1985:123)

d. ʔlót   háʔaš-i-š-ge   mí-łaʔáʔaš-ha-yi.   (Washo, Hanink, p.c.)
   yesterday rain-INDEPT-DS-NM.ACC 1/2-explain-CAUS-INDEPT
   'I'm telling you about how it rained yesterday.'

Notice that the examples in (47a-c) have object-control type meanings, in which the object of the matrix clause is coreferential with the null subject of the embedded subject, while the matrix subject has 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, the 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 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—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/theme object, as shown in the simplified structure in (48) for (47b). (Here I suppress the difference between Force and Fin, which was important above, along with other details). All things being equal, then, 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 (47a-c).

(48)   She$_k$ [$_{vP}$ ordered me$_i$ [$_{CP}$ C$_{SR}$ [PRO$_i$/pro$_i$ go]]]
                    |_____| |_____| Agree

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.[23] 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 cognate 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. First, we know that agreement probes are parameterized as to whether they are case

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[23] Clem (to appear) 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 and Agree with both subject and object in both the main clause and the embedded clause, its realization then being potentially sensitive to the features of any combination of these arguments. My concern about this approach is that it 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 even what is found in Shipibo and Yawanawa.

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 (48) in a subset of the accusative-aligned languages: yes in the ones in which C_{SR} is not case sensitive and no in the ones where it is case sensitive. More data is certainly 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 like (47). Second, the case sensitive account 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 will have nominative/absolutive case and other subjects will have ergative case.[24] 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 (48), there being no case to be sensitive to. Overall, 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 where it exists. Therefore, case sensitivity seems like the wrong tool for this job.[25]

Indeed, older pre-Agree generative approaches have analogous struggles with the configuration in (47). For example, Hermon (1985) develops a GB theory of SS 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 (47), given that it is with infinitival complements in so many languages (see Hermon (1985: 122-124), who realizes that she has to stipulate that IQ 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 that in structures like (47). Again, for individual languages one can stipulate that the SS C happens to be a subject-oriented anaphor, since 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 (47) with SS morphology. In this way, a Finearan analysis would be like Arregi and Hanink's case-based one: it can handle individual cases, but it expects more crosslinguistic variation than has been observed.

In this work, we now have the tools to make the right prediction for these cases. Suppose that languages do not in general have special morphosyntactic structures for CP complements of triadic verbs only; triadic verbs select the same kinds of CP complements that dyadic verbs select.[26] Language learners of say Choctaw encounter examples with SR marking on
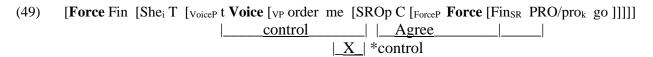
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[24] This reasoning assumes that the CP complement is non-nominal, so that it does not trigger ergative on the matrix subject by itself. The predictions are a bit different if CP is nominal.

[25] 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.

[26] Without this assumption we could get 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.

complement clauses. Their innate knowledge of the PIC tells them 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-spaces of complement clauses license an SROp, which is the immediate goal of upward probing from Fin$_{SR}$. This SROp then falls under the same principles of control theory as its kin, SoK, Sp, and LogOp. Control theory—in particular, the thematic matching condition—implies that the agent-subject of the matrix verb can control the SROp, but the goal-object of the matrix verb cannot, even though this is the argument that controls the PRO subject of the embedded clause, if there is one (see chapter 8 for discussion).[27] 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, why the matrix subject but not the matrix object can antecede logophoric pronouns and shifted 'I', and so on. The structure is sketched in (49).

(49) [$_{\textbf{Force}}$ Fin [She$_i$ T [$_{VoiceP}$ t **Voice** [$_{vP}$ order me [SROp C [$_{ForceP}$ **Force** [Fin$_{SR}$ PRO/pro$_k$ go]]]]]
                         |_____control_____| |__Agree_____|_____|
                                     |_X_| *control

This core fact that SR still 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 goes on to make a potentially strong prediction 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 of course NPs with certain thematic roles are 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 operator, and thematic roles are crucial to controller choice in OC structures. Therefore, I predict that thematic roles should play an important role in SR on complement clauses but not adjunct clauses.

       Unfortunately, the opportunities to test this prediction using the existing literature are somewhat sparse. For example, I predict that the oblique agent of a passive sentence in a language like Imbabura 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) above). For instance, a hypothetical example like (50) 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

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Children know that SS marking will not necessarily be found on complement clauses. When they see that it 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.

[27] There is an important assumption here that SROp is like SoK, Sp, and LogOp in receiving an agent-like thematic role from the C-space head that licenses it. This might be because the C of complement clauses is like a grammaticized version of 'say' here too (although we do not see that lexically in these languages). Note also that object-like operators like AddrOp and OoK seem to depend on the existence of a corresponding subject-like operator, but not vice versa.

to Juan and it would be felicitous, because the two indices are different. In contrast, if the derived subject with the theme role is the only possible controller of SROp, as with adjunct SR, then one should get only SS marking in an example like (50).

(50)   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 particular interaction (see also Sterling 1993); all their examples of SR interacting with passive seem to involve adjunct clauses. Moreover, the situation does not arise in Hopi (Jeanne 1978), Choctaw (Broadwell 2008: 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 might also be limited. For example, Broadwell (2006: 246) says that there is no source-marking P comparable to English *from* in Choctaw.[28]

    One area where there is some relevant data 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 (51a) and (52a). 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 must be used, not the expected DS marking.[29] In contrast, DS marking is required with an overt third person pronoun in the embedded clause, as in (51b) and (52b).

(51)   a. Ali-me   [(ñuka)   Juzi-wan parlaa-**ngapaj]**   (IQ)
            be.good-EV I   José-with speak-SS.SBJV
            'It is good (for me, for one) to speak with José.' (Cole 1983)

        b. Ali-me   [pay Juzi-wan parlaa-**chun]**   (IQ)
            be.good-EV he   José-with speak-DS.SBJV
            'It is good for him to speak with José.' (Cole 1983)

(52)   a. Chay kipi llashaj-mi ka-rka   [(ñuka) apa-**ngapaj]**   (IQ)

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[28] Another potential avenue for investigating this issue could be possessor raising constructions. We saw above that a possessor raised to subject position can count as the antipivot for SR marking on adjunct clauses in Choctaw, as expected if such possessors land in Spec TP. However, a raised possessor might not be able to be the OC controller of SROp in a complement clause, assuming that it does not have a subject-like thematic role with respect to the CP-selecting verb (if the construction is genuine possessor raising, not merely external possession). However, Broadwell (1990, 1997, 2006) does not discuss the interaction of possessor raising with SR in complement clauses. Indeed, the crucial structure might not arise if a verb like 'think' counts as a transitive predicate, given that possessor raising to subject position is only possible in Choctaw with a subset of intransitive verbs (Broadwell 2006: 307).

[29] The pronoun *kan* 'you' is also possible with SS marking in (51) and (52). 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. (53)).

that   bag   heavy-EV   be-3SG.PST   I   take-SS.SBJV
'That bag was too heavy (for one/me) to carry.' (Cole 1983: 7-8)

    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 (B&CS 2020b) is that predicates like 'be good' and 'be heavy' in IQ select a null experiencer phrase, the one for whom doing something is good, or the one who judges/experiences the heaviness of the bag (cf. English *That bag was too 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 (53).

(53)   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].
               (weird outside of a strong discourse context)

The null experiencer argument in (51) and (52) can then control the SROp in the subjunctive CP complement. This is consistent with Generalized Control Theory, which accepts an experiencer as the controller of subject-like ghostly DPs like SROp, as long as the matrix verb does not also take an agent argument. Fin$_{SR}$ in the complement clause then enters into Agree with SROp and with the embedded subject, and the SS version is possible if the two can be coreferential (or overlap in reference), as in (51a) and (52a). This accounts for the anomalous-looking SS marking seen in this example. Important for the current topic, 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 (54).

(54)   [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 is in line with 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. But the covert experiencer is clearly not the structural subject in Spec TP in these examples; rather 'that bag' is in (54). Fin$_{SR}$ then finds as its goals 'I' and 'that bag' in (54). Since these are not coreferential, only DS marking is felicitous. Here then is one attested 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 to encourage me as I hope for more data of this type to come in.[30]

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[30] 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, then, is whether dative experiencers can also count as antipivots for SR marking on an adjunct clause. I did

7.7 Conclusion

In this chapter, we have seen that SR is a "weird thing that Cs do to relate to the DPs around them." Moreover, it is like indexical shift and logophoricity in that the C is relating 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 obligatory-controlled by an argument of the matrix verb and that C can agree with?

The answer to this question that I have argued for 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 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 in these constructions, being sensitive to processes of DP movement and the like. This direct Agree type of SR also extends to auxiliary and restructuring constructions in at least 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 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 gap 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. Generalized 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—a robust generalization that has not been well-explained by 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 it does not affect 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 IQ 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 would be 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 coverage to the Pacific Rim, as it is found in languages of North America, South America, Australia, and New Guinea. So it is relatively rare for a language to have any particular construction from this family, and each particular construction has a somewhat narrow

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not find any examples of this sort in Davies (1986) or Broadwell (1990, 1997, 2005). The prediction is also affected by the fact that dative experiencers in Choctaw might count as structural subjects, the way they do in Icelandic; they are, for example, marked with nominative case even as they trigger dative agreement (Davies 1986: 88).

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. As are mammals that have some kind of forelimb.

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