UCLA Working Papers in Linguistics, Theories of Everything
Volume 17, Article 17: 131-153, 2012

Two Last Resort Phenomena in Senaya (Neo-Aramaic)

Laura Kalin

I present novel data from Senaya (Neo-Aramaic of Iran; McPherson, Ryan, and Kalin 2012) revealing two last resort phenomena that pose a theoretical puzzle for existing theories of last resort mechanisms. In Senaya, non-canonical aspectual morphology can be used independently of aspect for argument licensing. Following a thorough empirical look at Senaya's core aspectual properties, I lay out a preliminary account of how Senaya's last resort mechanism functions broadly, and suggest ways that this mechanism might be incorporated into the syntax.

Keywords Neo-Aramaic, syntax, agreement, aspect, last resort

Introduction

In this paper, I lay out novel data revealing two last resort phenomena in the Neo-Aramaic language Senaya, originally spoken in the city of Sanandaj in Iran. I show that theoretically accounting for the behavior of these last resort phenomena is not straightforward, and that existing theories of last resort phenomena (in particular, Rezac (2011)) cannot fully account for Senaya. As an alternative to previous accounts, I present two possible ways to implement this last resort mechanism dynamically in the syntax, one involving selection, and the other involving the activation of a φ-probe.

Giving a linguistic phenomenon the label 'last resort' is crucially tied to the following two properties. First, the phenomenon must appear in response to an impending failure in the derivation. Second, the phenomenon can *only* appear in precisely these environments (where otherwise there would be ungrammaticality), and is not a general/freely-available strategy. For example, when there is a 'stranded affix', an Aux may be inserted as a last resort to provide a host for it (Lasnik 1981; Chomsky 1991; Halle and Marantz 1993; Schütze 2003; Bjorkman 2011). Senaya's two last resort mechanisms both crucially involve the addition of an agreement locus to facilitate argument licensing; elsewhere these loci cannot be freely added, but rather are tied directly to aspect.

This paper is laid out as follows. In §1, I present a brief syntactic sketch of Senaya, from both an empirical standpoint and a theoretical standpoint (following work by Kalin and McPherson (2012) and Kalin and van Urk (2012)). In §2, I introduce Senaya's last resort phenomena. In §3, I discuss the puzzle presented by Senaya's last resort mechanisms, and propose ways to resolve this puzzle.

All data in this paper come from McPherson, Ryan, and Kalin (2012).

1 Brief syntactic sketch of Senaya

Senaya is an SOV Semitic language which is head-marking and has a NOM/ACC alignment. I begin by detailing Senaya's basic morphology, §1.1, and then turn to the aspectual contrasts, §1.2; Senaya distinguishes three basic aspects: perfective (§1.2.2), imperfective (§1.2.3), and progressive (§1.2.4). At the end of the section, I review previous analyses of Senaya's basic syntax, §1.3.

1.1 Morphology overview

Senaya has several different verbal bases formed by means of root and pattern morphology. Examples of these can be seen in Table 1.

Table 1: *Senaya verbal bases*

Root	**Imperfective**	**Perfective**	**Infinitive**	**Imperative**
r-k-w ('to ride')	raakw	rkuu	rkaawa	rkuu
q-ṭ-l ('to kill')	qaaṭl	qṭeel	qṭaala	qṭol
sh-t-y ('to drink')	shaaty	shtee	shtaaya	shtii(m.)/shtee(f.)

The bases that I will be most concerned with are the perfective and imperfective bases, as they participate centrally in all aspects, §1.2. Concatenative morphology that can be added onto these verbal bases includes agreement morphology, the enclitic auxiliary, the past tense suffix -*waa*, and an assortment of tense, mood, and aspectual prefixes.

The two paradigms for agreement on verbal bases across Neo-Aramaic are termed the S-suffixes and L-suffixes (e.g., Khan 2002, 2008). S-suffixes are the 'simple' suffixes while L-suffixes all begin with an *l*, historically an accusative/dative preposition (Doron and Khan 2012). Paradigms for these agreement suffixes are given in Tables 2-3.

Table 2: *S-suffixes in Senaya*

	Singular	Plural
1st p.	-en(m.)/-an(f.)	-ox
2nd p.	-et(m.)/-at(f.)	-iiton
3rd p.	-∅(m.)/-aa(f.)	-ii

Table 3: *L-suffixes in Senaya*

	Singular	Plural
1st p.	-lii	-lan
2nd p.	-lox(m.)/-lax(f.)	-looxon
3rd p.	-lee(m.)/-laa(f.)	-luu/-lun

There is obligatory agreement with all subjects as well as definite, specific, and/or pronominal (indirect or direct) objects (henceforth DSP objects). Which suffixes surface to mark these arguments depends on the aspect of the verb and the presence of arguments that require agreement. I return to this in detail in §1.2.

The enclitic auxiliary *y*[1] surfaces in four distinct environments: (i) on predicate adjectives and nominals, (ii) in the progressive, (iii) in ditransitives, and (iv) on infinitives. The auxiliary takes a single agreement suffix.[2] I return to the auxiliary in §1.2.4.

[1]The auxiliary *y* has three allomorphs, *y*, *ii* and ∅: *y* (the underlying morpheme and elsewhere allomorph) vocalizes to *ii* preceding a consonant, and *ii* deletes following a vowel (i.e., *y* deletes in the frame V_C).

[2]Agreement on Aux resembles a mix of S- and L-suffixes, but has a unique form for third person past tense. Thus, for the purposes of this paper, I take the auxiliary to have its own idiosyncratic inflectional paradigm.

The maximal structure of a verb is laid out in (1).

(1) Neg – T/A/M Prefix – **VerbBase** – S-suffix – Past – L-suffix = Aux – Agr

1.2 Aspectual contrasts

In this section, I briefly justify the use of the terms ‘perfective’ and ‘imperfective’ for the aspectual bases in Senaya. I then go through each aspect in turn to detail how the verbal complex looks in these instances.

I will briefly preview the crucial observations from this section. First, there is an aspect split between the perfective and imperfective in Senaya. The perfective verb base has exactly one agreement slot, which is always filled with subject agreement in the form of an L-suffix. The perfective base cannot host agreement with an object; this will lead to the first last resort mechanism discussed in §2. The imperfective verb base has exactly two agreement slots: the first is filled with subject agreement in the form of an S-suffix, and, when there is a DSP object, the second slot is filled with object agreement in the form of an L-suffix. The imperfective base cannot host agreement with a second object (i.e., in ditransitives); this will lead to the second last resort mechanism discussed in §2.

1.2.1 Terminology

It has been argued extensively that verbal bases in Neo-Aramaic are aspectual (Krotkoff 1982; Hoberman 1989; Coghill 1999). Below, I will show that in Senaya the perfective and imperfective bases correlate with the properties canonically associated with these aspects.

The imperfective base surfaces to express habitual events and/or durative events in the present or future, (2a). For past tense habitual or durative events, the past tense morpheme *-waa* is suffixed to the imperfective base, (2b).[3] (Ignore agreement marking for now.)

(2) a. Axnii (kod yooma) xelya shaat-ox.
we each day milk drink.IMPF-S.1PL
‘We drink milk (every day).’

b. Aana &el suusii rakw-an-waa.
I on horse ride.IMPF-S.1FS-PAST
‘I used to ride horses.’

The perfective base surfaces to express completed events as a whole, (3a). Adding the past tense marker to the perfective, (3b), results in a distant past interpretation.

(3) a. Aawa (temal) mpel-ee.
he yesterday fall.PFV-L.3MS
‘He fell (yesterday).’

b. Aana &el suusii rkuu-waa-lii.
I on horse ride.PFV-PAST-L.1SG
‘I rode a horse (a long time ago).’

[3] I use the following abbreviations: 1, 2, 3 = 1st, 2nd, 3rd person, AUX = auxiliary, AGR = agreement, DFLT = default, F = feminine, IMPF = imperfective, INDIC = indicative, L = L-suffix, M = masculine, NEG = negation, PAST = past, PERF = perfect, PFV = perfective, PL = plural, S = S-suffix, S(G) = singular. The transcription system used for Senaya contains the following non-standard characters: sh = /ʃ/, ṭ = /t͡ˤ/, & = /ˤ/, ’ = /ʔ/.

Further confirming this classification of the perfective and imperfective is the (in)felicity of negating the endpoint of the event in the two aspects, (4)-(5). (Ignore for the moment the complexity of the (b) examples, and simply take them to express perfective aspect.)

(4) a. Temal aana xa kolbe sooy-an-waa... (imperfective)
yesterday I one shack build.IMPF-S.1FS-PAST
'Yesterday I built a shack (for a while)...'
b. ...walii laa-tm-xaḷṣ-an-ee.
but NEG-TM-finish.IMPF-S.1FS-L.3MS
'...but I didn't finish it.'

(5) a. Temal aana xa kolbe meswee-lii... (perfective)
yesterday I one shack build.PFV-L.1SG
'Yesterday I built a shack...'
b. #...walii laa-tm-xaḷṣ-an-ee.
but NEG-TM-finish.IMPF-S.1FS-L.3MS
#'...but I didn't finish it.'

Just as is canonically found in imperfective aspect, the use of the imperfective base in (4a) can felicitously be followed with a negation of the endpoint (culmination) of the event, (4b). In addition, as expected, the negation of the endpoint of a perfective verb, (5), is infelicitous.

I now go through each aspect's agreement profile in turn, starting with the perfective verb base.

1.2.2 Perfective aspect

The perfective verb base can host agreement with exactly one argument, the subject, and agreement appears in the form of an L-suffix. Subjects of unergatives, (6a), unaccusatives, (6b), and transitives, (6c) all pattern alike; non-DSP objects do not trigger agreement, (6c).

(6) PERFECTIVE *L-suffix = subject:*
a. Axnii dmex-**lan**.
we sleep.PFV-**L.1PL**
'We slept.'
b. Axnii pleq-**lan**.
we leave.PFV-**L.1PL**
'We left.'
c. Axnii xa ksuuta ksuu-**lan**.
we one book write.PFV-**L.1PL**
'We wrote a book(fem.).'

Since DSP objects obligatorily trigger agreement, and yet the perfective base can only host one agreement morpheme, it follows that an agreeing object is banned from appearing with the perfective base:

(7) *Axnii oo ksuuta ksuu**(-laa/-a)-lan(-laa/-a)**.
we that book write.PFV**(-L/S.3FS)-L.1PL(-L/S.3FS)**
Intended: 'We wrote that book(fem.).'

Object agreement cannot be omitted, and no matter how the suffixal arrangement is restructured, object agreement is completely impossible on the perfective base.

The first last resort strategy that I introduce in §2 deals precisely with how the language enables a DSP object to appear in perfective aspect.

1.2.3 Imperfective aspect

The imperfective verb base can host agreement with up to two arguments. Subject agreement appears closest to the verb, in the form of an S-suffix. Object agreement (when induced) appears following subject agreement, in the form of an L-suffix. Just as on the perfective base, subjects of unergatives, (8a), unaccusatives, (8b), and transitives, (8c-d) all pattern alike; non-DSP objects do not trigger agreement, (8c), but DSP objects do, (8d).

(8) IMPERFECTIVE *S-suffix = subject; L-suffix = object:*

a. Axnii damx-**ox**.
we sleep.IMPF-**S.1PL**
'We sleep.'

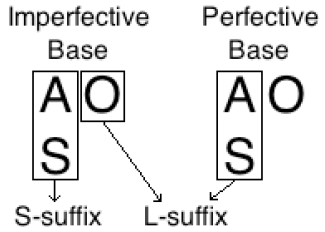
b. Axnii palq-**ox**.
we leave.IMPF-**S.1PL**
'We leave.'

c. Axnii xa ksuuta kasw-**ox**.
we one book write.IMPF-**S.1PL**
'We write a book(fem.).'

d. Axnii oo ksuuta kasw-**ox-laa**.
we that book write.IMPF-**S.1PL-L.3FS**
'We write that book(fem.).'

Comparing the perfective base with the imperfective base, an aspect-based agreement split can be seen, schematized in (9). (A = transitive subject; O = transitive object; S = intransitive subject.)

(9) AGREEMENT SPLIT



The subject marking of the perfective is the object marking of the imperfective (L-suffixes), while a unique series of agreement markers surfaces for imperfective subjects (S-suffixes). Interestingly, unlike most aspect based splits, there is no ergativity on either side of the split. This will factor centrally into Kalin and van Urk's (2012) analysis of Senaya's basic syntax, presented in §1.3.1.

1.2.4 Progressive aspect

The final core aspect to be discussed is progressive. The progressive is formed by adding the enclitic auxiliary onto the imperfective verb base (with its two agreement slots). The auxiliary also hosts its own single agreement slot, resulting in a total of three potential agreement slots. The auxiliary may double agreement already present, instantiate new agreement, or simply show default agreement. I go through all of these possibilities in turn.

In an intransitive progressive, (10a), or transitive progressive with a non-DSP object, (10b), the auxiliary simply doubles subject agreement, while the imperfective verb base hosts subject agreement as normal.

(10) a. Aanii damx-**ii**=∅-**luu**.
they sleep.IMPF-**S.3PL**=AUX-**3PL**
'They are sleeping.'

b. Axnii xa ksuuta kasw-**ox**=y-**ox**.
we one book write.IMPF-**S.1PL**=AUX-**1PL**
'We are writing a book.'

In a transitive progressive, the agreement configuration is much more complex. The auxiliary may double agreement with the subject (just as in (10)), (11a), or may agree with the object while the object agreement slot on the verb base is filled with default *-lee* (L.3MS), (11b), or may host default agreement while object agreement appears on the verb base, (11c). It is not grammatical for object agreement to be doubled, (11d). There is no consistent discernible change in meaning.

(11) a. Axnii oo ksuuta kasw-**ox-laa**=y-**ox**.
we that book write.IMPF-**S.1PL-L.3FS**=AUX-**1PL**
'We are writing that book(fem.).'

b. Axnii oo ksuuta kasw-**ox-lee**=∅-**laa**.
we that book write.IMPF-**S.1PL-L.DFLT**=AUX-**3FS**

c. Axnii oo ksuuta kasw-**ox-laa**=∅-**lee**.
we that book write.IMPF-**S.1PL-L.3FS**=AUX-**DFLT**

d. *Axnii oo ksuuta kasw-**ox-laa**=∅-**laa**.
we that book write.IMPF-**S.1PL-L.3FS**=AUX-**3FS**

This variation will not be of further interest in this paper. As a final note on progressives, the strategy in (11b) (where object agreement appears on the auxiliary) is only possible when the object is third person (Kalin and McPherson 2012).

1.3 Previous analyses

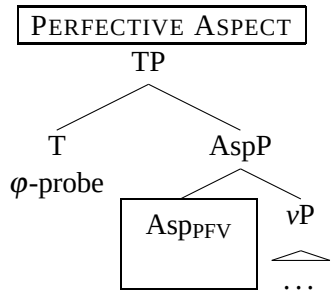
In this section I outline the basic syntax of Senaya, building off of analyses by Kalin and van Urk (2012), §1.3.1, and Kalin and McPherson (2012), §1.3.2.

1.3.1 Kalin and van Urk 2012

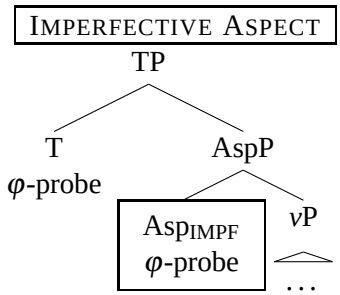
Kalin and van Urk (2012) argue that the basic difference between perfective and imperfective in Senaya is the presence of a φ-probe on Asp. In particular, there is a φ-probe on Asp in the imperfective but not the perfective. In both aspects, T also carries a φ-probe.

This is schematized in (12).

(12) a.



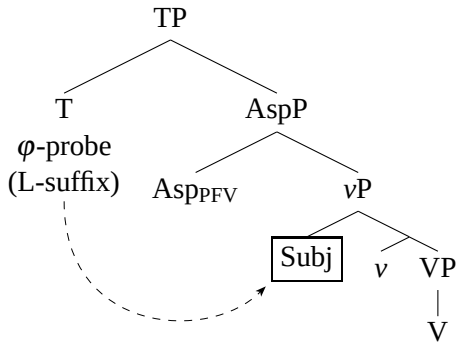
b.



Agreement with Asp spells out as an S-suffix, and agreement with T spells out as an L-suffix.

This derives the empirical agreement split in the following way. In the perfective, there is exactly one φ-probe, on T. This φ-probe establishes an agree relation with the highest argument, whether that be the only argument (in an intransitive) or the subject (in a transitive). Since agreement is with T, this agreement spells out as an L-suffix. (13) depicts agreement in the perfective with an unergative subject.

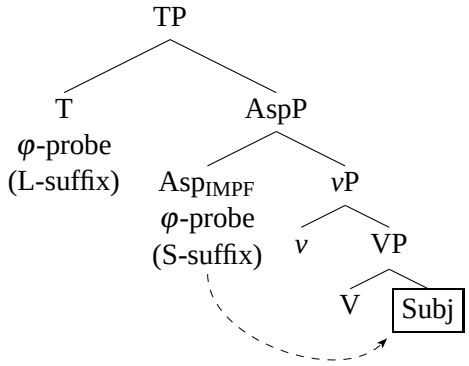
(13)



Kalin and van Urk (2012) take indefinite/nonspecific objects to pseudoincorporate into the verb as NPs (along the lines of Massam (2001) and Dayal (2011)), and hence they do not need to (nor are they able to) agree.

In the imperfective, the additional φ-probe on Asp stops T from agreeing with the subject. Starting with an intransitive, it is easy to see that the φ-probe on Asp will be closer to the single argument, whether it is merged as an agent or theme, as in the unaccusative (14).

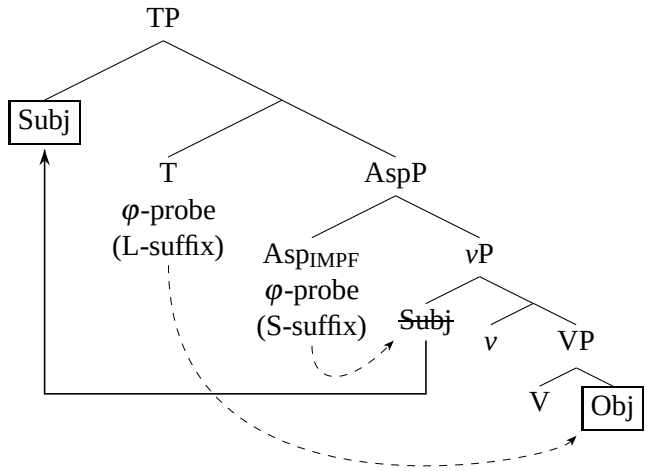
(14)



Agreement with the single argument of an intransitive in the imperfective thus spells out with an S-suffix. The failed agreement of T in (14) spells out as null but does not result in a crash (following proposals by Preminger (2011) and Halpert (2011)).

In an imperfective transitive, both φ-probes come into play. First, Asp probes the higher argument, the subject, resulting in subject agreement in the form of an S-suffix. Next, T's EPP feature targets the subject and the subject raises to spec-TP. Finally, T probes and encounters the object, resulting in object agreement in the form of an L-suffix.

(15)



Kalin and van Urk take *v* to be completely inactive in Senaya, neither instantiating agreement nor inducing spellout of a VP phase.

In support of these structures, Kalin and van Urk note that the morpheme order – S-suffix closer to the verb base than L-suffix – reflects the syntactic structure, where Asp is closer to V than T is. Further, S-suffixes appear inside of the past tense morpheme, (16), a fact also predicted by these structures, since Asp is below T.

(16) Ooya k-axl-**aa**-waa-**lee**.
she INDIC-eat.IMPF-**S.3FS**-PAST-**L.3MS**
'She used to eat it.'

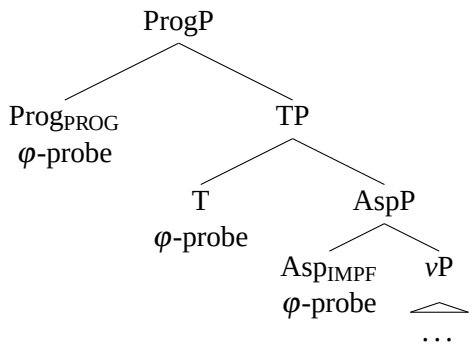
In sum, Kalin and van Urk propose to derive Senaya's aspectual split via the extra φ-probe on Asp in the imperfective, which they relate to recent proposals on split ergativity (Coon 2010; Coon and Preminger 2011). Since perfective subjects and imperfective objects are both probed by T, they show identical agreement (L-suffixes); imperfective subjects uniquely agree with Asp, and hence are marked with a unique agreement series (S-suffixes).

1.3.2 Kalin and McPherson 2012

Kalin and McPherson (2012) argue for another layer of structure, above TP, overtly realized in progressives. Kalin and McPherson pretheoretically label this projection AuxP, which I will call ProgP. Progressive Prog, which I will annotate $\text{Prog}_{\text{PROG}}$, carries a φ-probe, leading to its overt expression upon agreement, (17). Non-progressive (i.e., semantically empty) Prog, annotated Prog_0, does not (canonically) carry a φ-probe.[4]

[4]There is a lot of evidence for the high position of Prog, as represented in (17), e.g., Prog has the potential to agree with the subject or direct object, and progressive aspect necessitates Aux insertion, suggesting that Prog

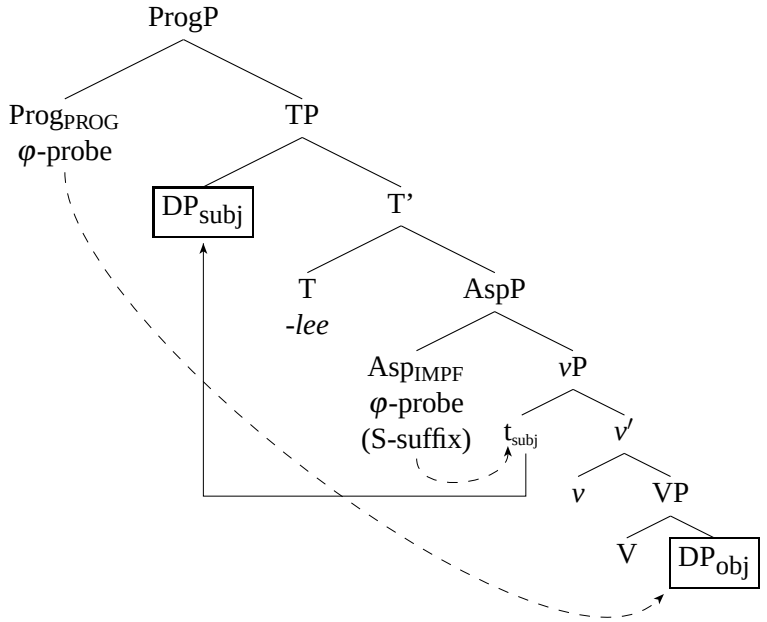
(17)



Relevant for this paper is the structure of transitive progressives in which object agreement appears on the Aux/Prog (see §1.3.3 for why Aux appears here). Kalin and McPherson propose the structure in (19) for the derivation of (11b), repeated in (18):

(18) Axnii oo ksuuta kasw-**ox-lee**=∅-**laa**.
we that book write.IMPF-**S.1PL-L.DFLT**=AUX-**3FS**
'We are writing that book(fem.).'

(19)



Asp agrees with the subject, as usual. T is filled with the dummy agreement morpheme *-lee*, and so does not do any probing/agreeing. Prog probes the object, resulting in object agreement on the auxiliary (see §1.3.3). In addition, the object in (19) is restricted to third person. Kalin and McPherson argue that this is a Person Case Constraint effect (Bonet 1991; Anagnostopoulou 2003; Béjar and Rezac 2003), resulting from defective intervention of the subject on Prog's path to the object, which prevents licensing of first/second person objects.

Finally, I adopt the following condition, adapted from Kalin and McPherson (2012):

is stranded (Bjorkman 2011). An important question here involves whether it is desirable to posit Prog above T. It may turn out that the nature of Prog is different from that of Asp; for example, perhaps Prog constitutes a higher aspectual verb and not simply a functional projection on the spine. I put aside this question here and treat Prog and Asp alike, as functional heads that are part of the extended inflectional domain of T.

(20) **ARGUMENT-LICENSING CONDITION:** Every argument DP[5] must enter into an Agree relation with (at least) one unique φ-probe.

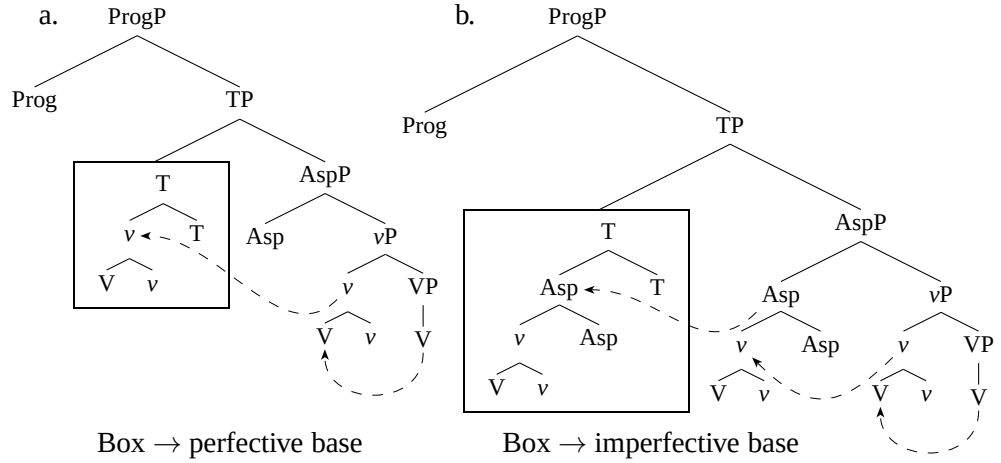
This condition accounts for the fact that subjects and DSP (direct and indirect) objects must trigger agreement (at least once), and if they do not, the derivation crashes. The condition in (20) dictates that there must be (at least) one φ-probe in a structure for every (DSP) DP that needs licensing.

1.3.3 Head movement and Aux in Senaya

I augment Kalin and van Urk (2012) and Kalin and McPherson (2012) with a proposal about head movement in Senaya. In particular, I propose that there is head movement of V to T in tensed clauses. Further, I make the following two assumptions about head movement in Senaya: (i) Asp is only an eligible target of head movement when it is 'active' / 'marked' (i.e., contains a φ-probe), following e.g., Bjorkman (2011), and (ii) V cannot head-move any higher than T.

The first of these assumptions allows me to make the following generalization: when the head complex following head movement is V+*v*+T, (21a), this spells out as the 'perfective' base form of the verb; when the head complex following head movement is V+*v*+Asp+T (differing only in having incorporated Asp, which in turn results from an active Asp containing a φ-probe), this spells out as the 'imperfective' base form of the verb, (21b).[6]

(21) a. b.



In this way, the 'aspectual' verb form can be seen as arising from the precise make-up of the head-complex in T, which in turn is driven by which inflectional heads are syntactically 'active' (and crucially, whether Asp is 'active').

The second of my two assumptions (head movement stops at T) allows me to derive the profile of Aux insertion in Senaya. In particular, I adopt the Bjorkman (2011) view of

[5]Recall that Kalin and van Urk (2012) take non-DSP objects to pseudo-incorporate into the verb as NPs (Dayal 2011; Massam 2001), and as such to be exempt from the licensing requirements on DPs.

[6]This same result can be achieved without skipping heads, assuming that the morphology can be sensitive to the presence or absence of a φ-probe on the incorporated Asp head. Under this alternative view, V+*v*+Asp+T spells out as the perfective base while V+*v*+Asp$_{\varphi}$+T spells out as the imperfective base. Crucially, it cannot be Asp$_{\text{IMPF}}$ and Asp$_{\text{PFV}}$ that are the deciding factor for the spellout of the verbal complex, precisely because in last resort environments there is a mismatch between morphology and aspect, §2.

auxiliaries, in which an Aux is inserted to host stranded inflectional material, in response to something like Lasnik's (1981) Stranded Affix Filter. Since head movement stops at T, any inflectional material generated above T will be 'stranded', triggering the insertion of Aux. Thus, in progressives (where agreement is generated on Prog, above T), Aux must be inserted to host this agreement.[7] This take on Senaya's Aux is supported by the fact that Aux also surfaces in copula clauses, cliticized to predicate nominals and adjectives: in these instances, there is no verbal element, and so any material generated above the predicate will be stranded (e.g., past tense, φ-agreement on T), again triggering Aux insertion.

2 Last resort phenomena in Senaya

At last we are in a position to understand Senaya's last resort phenomena, which I have hinted at in previous sections. The first last resort mechanism is the move from the perfective base to the imperfective base when there is a DSP object in perfective aspect, §2.1. The second is the move from the imperfective verbal complex to the progressive verbal complex (with an Aux) in all ditransitives (be they perfective, imperfective, or progressive), §2.2.

2.1 Last resort use of the imperfective

As mentioned in §1.2.2, the perfective base is only able to host a single agreement morpheme, data repeated in (22) from (6c) and (7):

(22) a. Axnii xa ksuuta ksuu-**lan**.
we one book write.PFV-**L.1PL**
'We wrote a book(fem.).'

b. *Axnii oo ksuuta ksuu**(-laa/-a)-lan(-laa/-a)**.
we that book write.PFV**(-L/S.3FS)-L.1PL(-L/S.3FS)**
'We wrote that book(fem.).'

The result of this limitation is that object agreement is completely impossible to mark on the perfective base, and therefore DSP objects are banned with the perfective base, (22b).

This limitation differs crucially from the imperfective base, which can host up to two agreement morphemes, and therefore can grammatically appear with a non-DSP or DSP object, data repeated in (23) from (8c)–(8d):

(23) a. Axnii xa ksuuta kasw-**ox**.
we one book write.IMPF-**S.1PL**
'We write a book(fem.).'

b. Axnii oo ksuuta kasw-**ox-laa**.
we that book write.IMPF-**S.1PL-L.3FS**
'We write that book(fem.).'

[7] In the precise mechanism of Bjorkman (2011), a head's features are transferred to the next lower (marked) head via (a version of) Agree. Thus, inflectional material that is generated one head above the final landing site of *v*/V's head movement actually is not stranded (since it is transferred down one head); rather, inflectional material is stranded if it is more than one head away from the upper bound of head movement. In my system, this would translate to head movement going no higher than Asp, such that any material above T is stranded.

It is not, however, impossible to express a DSP object in the perfective (as was attempted unsuccessfully in (22b)). Exceptionally, in these instances, the imperfective base can be used to express perfective aspect; additionally, the prefix *tm-* appears on the imperfective verb base, indicating that despite the use of the imperfective base, the clause is perfective. Agreement then takes the same form it would have in the imperfective, cf. (23b). This is shown in (24).

(24) Axnii oo ksuuta *tm*-kasw-**ox-laa**.
we that book *TM*-write.IMPF-**S.1PL-L.3FS**
'We wrote that book(fem.).'

I will refer to verbs like those in (24) (consisting of *tm-* plus an imperfective base, with a perfective interpretation) as *tm*-perfectives.

Both the 'dummy' imperfective verb base and *tm-* are unavailable except in this type of derivation: it is impossible to use this construction when there is no DSP object, (25).

(25) *Axnii xa ksuuta *tm*-kasw-**ox**.
we one book *TM*-write.IMPF-**S.1PL**
'We wrote a book(fem.).'

The strategy for expressing perfective aspect in (24) can thus be seen as a "last resort" strategy, surfacing only when the primary strategy for expressing perfective aspect (i.e., with the perfective verb base) is unavailable.

2.1.1 Evidence for perfectivity

One might wonder whether *tm*-perfectives are truly perfective, or whether they retain some imperfective-like properties. There is ample evidence that the former is the case: verbs like those in (24) are truly perfective. I will illustrate a few of the relevant diagnostics.

First, imperfective verbs with a DSP object do not entail completedness, (26), cf. (4). On the other hand, *tm*-perfectives do entail completedness, (27), just as regular perfectives do, (5).

(26) a. Temal aana oo kolbe sooy-an-waa-lee... (imperfective)
yesterday I that shack build.IMPF-S.1FS-PAST-L.3MS
'Yesterday I built that shack (for a while)...'
b. ...walii laa-tm-xaḷs-an-ee.
but NEG-TM-finish.IMPF-S.1FS-L.3MS
'...but I didn't finish it.'

(27) a. Temal aana oo kolbe *tm*-sooy-an-waa-lee... (*tm*-perfective)
yesterday I that shack *TM*-build.IMPF-S.1FS-PAST-L.3MS
'Yesterday I built that shack (for a while)...'
b. #...walii laa-tm-xaḷs-an-ee.
but NEG-TM-finish.IMPF-S.1FS-L.3MS
'...but I didn't finish it.'

Second, the adverbials compatible with *tm*-perfectives pattern with those compatible with perfectives, not imperfectives. For example, the adverbial *qoome* 'tomorrow' is compatible with the imperfective but not a regular perfective or *tm*-perfective, (28).

(28) a. Axnii (qoome) oo ksuuta kasw-ox-laa. (imperfective)
we tomorrow that book write.IMPF-S.1PL-L.3FS
'We (will) write that book(fem.) (tomorrow).'

b. Axnii (*qoome) xa ksuuta ksuu-lan. (perfective)
we tomorrow one book write.PFV-L.1PL
'We wrote a book (*tomorrow).'

c. Axnii (*qoome) oo ksuuta *tm*-kasw-ox-laa. (*tm*-perfective)
we tomorrow that book *TM*-write.IMPF-S.1PL-L.3FS
'We wrote that book(fem.) (*tomorrow).'

Third, when the past tense morpheme -*waa* is suffixed to a *tm*-perfective, the interpretation is distant past, just like when -*waa* is suffixed to a regular perfective, and unlike when it is suffixed to an imperfective, (29).

(29) a. Axnii oo ksuuta *tm*-kasw-ox-waa-laa. (*tm*-perfective)
we that book *TM*-write.IMPF-S.1PL-PAST-L.3FS
'We wrote that book(fem.) a long time ago.'

b. Axnii xa ksuuta ksuu-waa-lan. (perfective)
we one book write.PFV-PAST-L.1PL
'We wrote a book a long time ago.'

c. Axnii oo ksuuta kasw-ox-waa-laa. (imperfective)
we that book write.IMPF-S.1PL-PAST-L.3FS
'We were writing that book(fem.).'

I conclude, then, that *tm*-perfectives are true perfectives on the aspectual level, despite the last resort use of the imperfective verb base in forming *tm*-perfectives.

2.2 Last resort use of the progressive

The second last resort mechanism in Senaya, like the one just discussed, employs a 'bigger' aspect in order to express additional DSP objects. Recall that Senaya's agreement split is three way: there is one agreement slot on the perfective base, two on the imperfective base, and three in the progressive verbal complex (the two from the imperfective plus one on Aux). Thus, just as a transitive with a DSP object causes problems for the perfective base, a ditransitive with two DSP objects cause a problem for the imperfective base.

On the surface, ditransitives in Senaya with two DSP objects are surprising in several ways. First, ditransitives necessitate the addition of the Aux onto the imperfective base, making the ditransitive verbal complex look just like the progressive verbal complex. Second, Aux agrees with the lowest argument, the direct object. Third, the direct object is limited to third person (following the person restriction on object agreement on the Aux, §1.2.4/§1.3.2). Finally, ditransitives are aspectually ambiguous: they can receive either an imperfective or progressive interpretation. All of these properties can be seen in (30).

(30) a. Aanii an klooche k-eew-**ii-lii**=∅-**luu**
they those cookies INDIC-give.IMPF-**S.3PL-L.1SG**=AUX-**3PL**
'They (will) give me the cookies.' (imperfective)
∼ 'They are giving me the cookies.' (progressive)

b. Aana oo ksuuta maxw-**an-ox**=ii-**laa**.
I the book show.IMPF-**S.1FS-L.2MS**=AUX-**3FS**
'I (will) show you the book.' (imperfective)
∼ 'I am showing you the book.' (progressive)

Empirically, it looks like Aux (which usually indicates a progressive) surfaces in ditransitives so that an additional argument can agree.

Perfective ditransitives use the progressive verbal complex, too. However, they again come along with the prefix *tm-*, and so do not result in any aspectual ambiguity.

(31) a. Aanii an klooche *tm*-eew-**ii-lii**=∅-**luu**
they those cookies *TM*-give.IMPF-**S.3PL-L.1SG**=AUX-**3PL**
'They gave me the cookies.' (perfective)
b. Aana oo ksuuta *tm*-maxw-**an-ox**=ii-**laa**.
I the book *TM*-show.IMPF-**S.1FS-L.2MS**=AUX-**3FS**
'I showed you the book.' (perfective)

Otherwise these perfective ditransitives look just like those in (30), with the direct object marked on the Aux and restricted to third person.

2.2.1 Evidence for aspectual ambiguity

Again, one might wonder whether ditransitives (of the sort without *tm-*, (30)) are truly aspectually ambiguous, or whether they are actually fully progressive. And again, there is evidence that the former is the case: verbal complexes like those in (30) are truly ambiguous between being imperfective and progressive.

It is harder to tease the imperfective and progressive apart, given their aspectual similarity, than it is to tease the perfective and imperfective apart, §2.1.1. The evidence here thus comes mainly from adverbials. Recall that plain imperfectives are compatible with *qoome*, 'tomorrow'. Progressives are not compatible with *qoome* but are compatible with *da&aana*, 'right now', which the imperfective is not compatible with, (32)-(33). Ditransitives are grammatical with either *qoome* or *da&aana*, (34).

(32) Aana (qoome / *da&aana) on talmiide molp-an-uu.
I tomorrow / *right.now the students teach.IMPF-S.1FS-L.3PL
'I (will) teach the students (tomorrow).' ≁ *'I teach the students right now.'

(33) Aana (*qoome / da&aana) on talmiide molp-an-uu=y-an.
I *tomorrow / right.now the students teach.IMPF-S.1FS-L.3PL=AUX-1FS
'I am teaching the students (right now).' ≁ *'I am teaching the students tomorrow.'

(34) Aana (qoome / da&aana) oo ksuuta maxw-an-ox=ii-laa.
I tomorrow / right.now the book show.IMPF-S.1FS-L.2MS=AUX-3FS
'I (will) show you the book (tomorrow).' (imperfective)
∼ 'I am showing you the book (right now).' (progressive)

I thus conclude that ditransitives are truly aspectually ambiguous between being imperfective (in which case the use of Aux is a last resort) and progressive (in which case Aux would be present independently).

2.3 When to use which last resort operation

Both last resort mechanisms in Senaya are, in a sense, valency-increasing operations: they take a deficient verb (one that cannot host agreement with all the arguments that require it) and increase its agreement potential. Interestingly, however, the choice of which mechanism to employ is fixed: to increase the agreement potential of a perfective base, the imperfective base is used; to increase the agreement potential of an imperfective base, the Aux is added. Notably, it is not possible to add Aux to a perfective base to facilitate object agreement:

(35) *Axnii oo ksuuta ksuu-**lan**=ii-**laa**.
we one book write.PFV-**L.1PL**=AUX-**3FS**
'We wrote the book(fem.).'

In the following section, this piece of data is addressed at a theoretical level along with the other properties of Senaya's last resort phenomena.

3 The theoretical puzzle

In this section I present the intuitive components of a proposal for how to theoretically account for Senaya's last resort phenomena, §3.1, and then home in on the questions raised and why a more precise formulation is far from straightforward, §3.2. I conclude by proposing two ways to account for Senaya's last resort phenomena directly in the syntax, one of which stays close to the intuitive account, §3.3.1, and one of which leaves the 'last resort' nature of these phenomena behind, §3.3.2.

3.1 The components of an intuitive account

Intuitively, the data seem to suggest that both last resort phenomena in Senaya result from the last resort activation of a potential Agree locus (i.e., Asp or Prog) that is inactive in a canonical aspect.[8] In other words, as a last resort to enable DSP objects to agree, Asp_{PFV} and Prog_0 can each carry a φ-probe, though canonically they do not.

Assuming an account of the morphology as presented in §1.3.3, there can thus be a mismatch between the aspectual semantics and the verbal base. Whenever Asp is 'active' (regardless of whether it underlyingly carries a φ-probe, Asp_{IMPF}, or is a last-resort activated Asp_{PFV}), the verbal complex will spell out morphologically with the 'imperfective' verb base; the morphology only reacts to the 'activity' of Asp, not to whether Asp is perfective or imperfective. Whenever Prog is active (regardless of whether it underlyingly carries a φ-probe, $\text{Prog}_{\text{PROG}}$, or is a last-resort activated Prog_0), there will be stranded material in Prog that will require (post-syntactic) Aux insertion, as is typical of canonical progressives.

Further, there seems to be an implicational relationship between active Agree loci:

(36) *Senaya's Implicational Activity Hierarchy:* $\text{T} \ll \text{Asp} \ll \text{Prog}$

[8] On an intuitive level, this is very similar to a proposal by Rezac (2011:Ch. 5) for regulating Person Case Constraint repairs and Dependent Case. However, I will show in §3.2 that Rezac's precise account does not work for Senaya.

What this hierarchy states is that T can be active (i.e., bear a φ-probe) without Asp or Prog being active, as is the case in canonical perfective aspect. If Asp is active, then T is too; this is the case in canonical imperfective aspect.[9] Finally, if Prog is active, then Asp and T must both be active as well, as is found in canonical progressive aspect.

The implications of (36) are desirable on two fronts. First, (36) accounts for why the progressive is built on the imperfective base form of the verb: Asp must also be active if Prog is. Second, (36) accounts for why the last resort strategy of activating a φ-probe on an extant functional head obligatorily activates Asp before Prog. This accounts for the ungrammaticality of the following example, repeated below from (35):

(37) *Axnii oo ksuuta ksuu-**lan**=ii-**laa**.
we one book write.PFV-**L.1PL**=AUX-**3FS**
'We wrote the book(fem.).'

(37) is ungrammatical because Prog is active but Asp is not, contra the hierarchy in (36).

The implicational hierarchy in (36) can be seen as related to the aspectual spectrum in (38a), adapted from Coon (2010), with Senaya's implicational hierarchy in (38b):

(38) a. $\leftarrow$ simple clause || complex clause $\rightarrow$
Perfective $\ll$ Imperfective $\ll$ Progressive
b. T $\ll$ Asp $\ll$ Prog

Coon argues for placing these three aspects on a scale of (potential) structural complexity, stated in terms of additional structure. Expanding on Coon's definition of "additional structure" to mean something more general – for my purposes, general enough to include the addition of probes as increasing structural complexity – then Senaya's implicational hierarchy maps directly onto the hierarchy of aspects in (38a): T is the canonical head active in the perfective (i.e., bearing a φ-probe), Asp is additionally active in the imperfective, and Prog is additionally active in the progressive. The increase in complexity of the clause in Senaya, then, results from introducing features (φ-probes) onto the existing clausal structure.

Finally, to account for the appearance of *tm-* in all and only last resort perfectives, I propose that there is a second aspectual projection, Perf(ect)P, directly above AspP (following, e.g., Iatridou et al. (2003)). Independent evidence for this projection in Senaya comes from the perfect prefix *gii-*, which can attach to a perfective verb base, (39).[10]

(39) Axnii xa ksuuta gii-ksuu-lan.
we one book PERF-write.PFV-L.1PL
'We have written a book.'

Notably, *gii-* and *tm-* cannot co-occur, suggesting they compete for exponence of the same head. In order to flag the clause as perfective (in lieu of the use of the perfective base), *tm-* is spelled out on the Perf head, potentially through a local selectional relationship: Perf

[9] Recall that I adopt the assumption from Kalin and van Urk (2012) that when T's φ-probe fails to find an appropriate goal, it spells out as null. Thus, in an imperfective intransitive or progressive intransitive, even though there is no L-suffix on the verb base, I still assume that T is underlyingly active.

[10] Perfect and perfective are formally distinct aspects: perfective aspect expresses an event as a whole, while perfect aspect relates two times, "on the one hand the time of the state resulting from a prior situation, and on the other the time of that prior situation" (Comrie 1976:52).

spells out as *tm-* in the context of an Asp whose φ-probe has been activated as a last resort.

Broadly speaking, Senaya's last resort phenomena function as follows:

(40) a. *Perfective with one DSP object:* T is canonically active in perfective aspect, but there are two arguments that need licensing. Asp is activated to enable licensing of both arguments by unique φ-probes.
→ Imperfective verb base used for perfective (with *tm-*)

b. *Imperfective with two DSP objects:* T and Asp are canonically active in imperfective aspect, but there are three arguments that need licensing. Prog is activated to enable licensing of all three arguments by unique φ-probes.
→ Progressive verbal complex used for imperfective

c. *Perfective with two DSP objects:* T is canonically active in perfective aspect, but there are three arguments that need licensing. Asp and Prog are activated sequentially, enabling all three arguments to agree with unique φ-probes.
→ Progressive verbal complex used for perfective (with *tm-*)

While this proposal sounds descriptively reasonable thus far, snags appear when trying to precisely implement this in the syntax.

3.2 Why Senaya presents a puzzle

Last resort mechanisms pose a number of crucial questions about how last resort phenomena interact with the syntax. What triggers a last resort mechanism? Conditions on the morphology, on PF, on LF, on spell out, on numerations? Intimately related with the answer to the previous question is how last resort mechanisms 'fix' a derivation: in the post-syntax, dynamically in the syntax, or directly in the numeration (either right off the bat or after a crash at spell out)?

Various answers to these questions have been given. Perhaps the most well-known last resort phenomenon is *do*-support, which has been argued to take place in the post-syntax, triggered by a morphological well-formedness filter (Lasnik 1981; Chomsky 1991; Halle and Marantz 1993). While this solution works well for *do*-support or a more general notion of Aux insertion triggered by morphological needs (Schütze 2003; Bjorkman 2011), it falls short of explaining how an argument that needs licensing in the narrow syntax could be helped by a post-syntactic mechanism.

Rezac (2011) offers a theory of last resort phenomena that is more powerful, and is triggered precisely by argument-licensing needs. Rezac proposes the last resort mechanism $\mathfrak{R}$ to account for cross-linguistic Person Case Constraint repairs, which rescues derivations by activating a potential Agree/Case locus. This operation is stated in (41):

(41) $\mathfrak{R}$ (for Agree/Case): A[n] uninterpretable feature (probe) may enter the numeration on a potential Agree/Case locus if needed for Case-licensing. (Rezac 2011:219)

What $\mathfrak{R}$ states is that an uninterpretable feature (specifically, a φ-probe) can be added to the numeration (onto a head with Case-licensing potential that is already in the numeration) when this uninterpretable feature is needed for convergence at spellout. The addition of this φ-probe is triggered in response to a crash at the interface of the syntax with LF or PF,

where DPs that have not been Case-licensed are ‘illegible’.

$\mathfrak{R}$ operates on phases, defined as triggered by an active φ-probe locus, which serves as the phase head. When a phase fails to converge, $\mathfrak{R}$ disassembles the structure in that phase and inserts a φ-probe into the phase’s numeration. The phase is then reassembled from scratch, but has a new chance to converge thanks to the additional Agree/Case locus.

Rezac’s (2011) account as it stands cannot account for Senaya. The fundamental reason for $\mathfrak{R}$’s failure in Senaya is $\mathfrak{R}$’s reliance on phases. To illustrate this, I will walk through a sample derivation in this system, applied to Senaya, for a clause with perfective aspect and a DSP object (which empirically results in a *tm*-perfective), (42).

(42) Failed derivation of *tm*-perfective with $\mathfrak{R}$

a. Starting numeration: $\mathrm{DP_{subj}}$, $\mathrm{DP_{obj}}$, V, *v*, Asp, T_φ, Prog
b. Structure building: $[_{\mathrm{TP}}\ \mathrm{T}_\varphi\ [_{\mathrm{AspP}}\ \mathrm{Asp}\ [_{v\mathrm{P}}\ \mathrm{DP_{subj}}\ v\ [_{\mathrm{VP}}\ \mathrm{V}\ \mathrm{DP_{obj}}\ ]]]]$
c. T probes: $[_{\mathrm{TP}}\ \mathrm{T}_\varphi\ [_{\mathrm{AspP}}\ \mathrm{Asp}\ [_{v\mathrm{P}}\ \mathrm{DP_{subj}}\ v\ [_{\mathrm{VP}}\ \mathrm{V}\ \mathrm{DP_{obj}}\ ]]]]$
d. T spells out AspP as a phase $\rightarrow$ CRASH! (Unlicensed $\mathrm{DP_{obj}}$)
e. $\mathfrak{R}$: disassemble phase, activate φ on Asp in numeration
f. New numeration: $\mathrm{DP_{subj}}$, $\mathrm{DP_{obj}}$, V, *v*, Asp_φ, T_φ, Prog
g. Structure building: $[_{\mathrm{AspP}}\ \mathrm{Asp}_\varphi\ [_{v\mathrm{P}}\ \mathrm{DP_{subj}}\ v\ [_{\mathrm{VP}}\ \mathrm{V}\ \mathrm{DP_{obj}}\ ]]]$
h. Asp probes: $[_{\mathrm{AspP}}\ \mathrm{Asp}_\varphi\ [_{v\mathrm{P}}\ \mathrm{DP_{subj}}\ v\ [_{\mathrm{VP}}\ \mathrm{V}\ \mathrm{DP_{obj}}\ ]]]$
i. Asp spells out *v*P as a phase $\rightarrow$ CRASH! (Unlicensed $\mathrm{DP_{obj}}$)[11]
j. $\mathfrak{R}$: applies but fails because there is no potential φ-probe locus in this phase
k. Irreparable structure / fatal crash

A similarly failed derivation holds of the last resort use of Prog_φ. $\mathfrak{R}$ thus fails to account for Senaya.[12]

Since the Senaya data cannot be explained by $\mathfrak{R}$ (the mechanism with the most potential to handle this data, to my knowledge), Senaya presents a significant puzzle.

3.3 New solutions

In this section, I briefly propose two new accounts of Senaya’s last resort phenomena. The first is similar to Rezac’s (2011) $\mathfrak{R}$ and the account in §3.1, maintaining the insight that that the derivation is saved via the last resort activation of a φ-probe. The second is a purely selectional account, reducing the last resort nature of these phenomena to selectional properties of lexical items, going against the intuitive proposal in §3.1.

[11] One might imagine that this particular step of the derivation involves the object raising above Asp, which would prevent the crash, but there is no evidence for a high position of the object in such derivations. Further, this stipulation would do nothing to prevent a crash if there is also a DSP indirect object, in which case both objects would have to raise above Asp to prevent a crash, and then the direct object would have to move above T in the next cycle to prevent a crash in the next phase.

[12] There are also several independent problems with Rezac’s account. First, $\mathfrak{R}$ falls short of accounting for Person Case Constraint repairs in several types of languages, including Georgian (repair by camouflage) and Finnish (repair by accusative activation). Second, $\mathfrak{R}$ fails to predict the location of repairs both crosslinguistically and within languages, which may alternate based on the features of the arguments in the illicit configuration (Walkow 2012). Third, it seems conceptually undesirable to allow a phase to crash and be reassembled from scratch; ideally last resort mechanisms would be achieved without such a powerful mechanism.

3.3.1 A last resort probe account

In order to theoretically implement the account in §3.1, what is needed is a way for Asp and Prog to be sensitive to the presence of DSP objects. In the case of Asp, this results in a certain countercylicity. In a canonical perfective, T would agree with the subject. However, in a *tm*-perfective (where there is a DSP object), Asp has to agree with the subject before T can, so that T is freed up to agree with an object. Asp therefore must be 'activated' before the derivation knows that anything has gone wrong.

This first proposal solves this countercyclicity problem by making Asp sensitive to the presence of a DSP object. To accomplish this, a new mechanism is introduced into the grammar, whereby a functional head may contain a probe which searches its c-command space and, upon encountering an argument of the relevant type, activates a φ-probe on that head. I will annotate such a probe 'LR' (for Last Resort), and will describe its properties in more detail below. This account adopts the insight from Rezac's (2011) $\mathfrak{R}$ that the derivation is saved via the last resort activation of a φ-probe. However, it does not make use of the idea that this involves spelling out, failing, adding something to the numeration, and trying again. Rather, I propose that the φ-probe activation happens dynamically in the syntax, as structure is being built. Reliance on phases (which fails for Senaya) is thus removed from the system.

Under the present proposal, there are two lexical entries for Asp, (43).

(43) Lexical entries for Asp heads in Senaya (last resort probe account)

a. $\text{Asp}_{\text{PFV,LR}}$: selects *v*P
b. $\text{Asp}_{\text{IMPF}\varphi}$: selects *v*P

The perfective Asp head, (43a), always contains an LR probe, as indicated. What Senaya's LR probe does is seek out DSP objects which have not yet agreed, and upon finding such an object, LR activates a φ-probe, directly on the head on which LR resides, in this case Asp_{PFV}. If LR does not find a goal succesfully, nothing happens. Thus, both Asp_{PFV} and Asp_{IMPF} can carry φ-probes: the former only does so upon the LR probe successfully finding a goal, while the latter always does so.

There are two corresponding lexical entries for Prog, (44), very similar to those in (43).

(44) Lexical entries for Prog heads in Senaya (last resort probe account)

a. $\text{Prog}_{0,\text{LR}}$: selects TP
b. $\text{Prog}_{\text{PROG}\varphi}$: selects TP

The non-progressive Prog head, (44a), always contains an LR probe. When LR probes and successfully finds a DSP object which has not yet agreed, it activates the φ-probe on Prog_0. $\text{Prog}_{\text{PROG}}$, on the other hand, always carries a φ-probe.

As in the intuitive account presented in §3.1, following the head movement proposal in §1.3.3, there can be a semantic and morphological mismatch. As far as Asp is concerned, the morphology is only sensitive to a φ-probe on Asp (or lack thereof), and so apparent imperfective morphology can actually be triggered by an underlying perfective Asp head, so long as that perfective Asp head carries a φ-probe. The path of head movement thus determines the form of the verb base, while the head's aspectual feature value determines the meaning (perfective or imperfective). Similarly, Aux insertion is only sensitive to the

presence or absence of a φ-probe on Prog, not to the semantic features of Prog.

This mechanism functions for Senaya as follows.

(45) Derivation of *tm*-perfective under the LR probe account

a. Starting numeration: DP_{subj}, DP_{obj}, V, *v*, Asp_{LR}, T_{φ}, $Prog_{LR}$

b. Structure building: $[_{AspP}\ Asp_{LR}\ [_{vP}\ DP_{subj}\ v\ [_{VP}\ V\ DP_{obj}\ ]]]$

c. Asp's LR probes: $[_{AspP}\ Asp_{LR}\ [_{vP}\ DP_{subj}\ v\ [_{VP}\ V\ DP_{obj}\ ]]]$

d. Asp's discovery of a DSP object that has not yet agreed triggers φ-activation

e. Asp's φ probes / is eliminated: $[_{AspP}\ Asp_{\varphi}\ [_{vP}\ DP_{subj}\ v\ [_{VP}\ V\ DP_{obj}\ ]]]$

f. Structure building: $[_{TP}\ T_{\varphi}\ [_{AspP}\ Asp\ [_{vP}\ DP_{subj}\ v\ [_{VP}\ V\ DP_{obj}\ ]]]]$

g. T's EPP attracts subj: $[_{TP}\ DP_{subj}\ T_{\varphi}\ [_{AspP}\ Asp\ [_{vP}\ \cancel{DP_{subj}}\ v\ [_{VP}\ V\ DP_{obj}\ ]]]]$

h. T's φ probes: $[_{TP}\ DP_{subj}\ T_{\varphi}\ [_{AspP}\ Asp\ [_{vP}\ \cancel{DP_{subj}}\ v\ [_{VP}\ V\ DP_{obj}\ ]]]]$

i. Building: $[_{ProgP}\ Prog_{LR}\ [_{TP}\ DP_{subj}\ T\ [_{AspP}\ Asp\ [_{vP}\ \cancel{DP_{subj}}\ v\ [_{VP}\ V\ DP_{obj}\ ]]]]]$

j. Prog's LR probes, does not find a DSP object that has not yet agreed

k. Derivation converges[13]

If there were an additional DSP object, in step (j), Prog's LR probe would successfully find a goal and would activate $Prog_0$'s φ-probe.

This account has several potential problems. First, how is it that the LR probe knows when it finds a DSP object? It is possible that LR is Case-relativized, but that would require detailing a Case system for Senaya that is independent of its Agree system, since Case would have to feed Agree; such a Case system could perhaps be adapted from Preminger (2011). Second, is this LR probe too powerful? Are there similar probes elsewhere in the syntax? And finally, can this account be extended to other instances of last resort φ-probe activation crosslinguistically? These questions are left open here.

3.3.2 A selection account

A very different way to account for Senaya is to say that the structure size of *v*P (or an equivalent projection) correlates with the number of DSP objects. With this additional information encoded on *v*P, it is possible to build Senaya's seemingly last resort behavior into the lexicon via selectional properties of particular heads, effectively taking away the last resort nature of these phenomena.

Under the selection account, there are *v*Ps of three different sizes – vP_0 (no DSP objects), vP_1 (one DSP object), vP_2 (two DSP objects) – and three lexical entries for Asp:

(46) Lexical entries for Asp heads in Senaya (selection account)

a. Asp_{PFV}: selects vP_0

b. $Asp_{PFV\varphi}$: selects vP_1 or vP_2

c. $Asp_{IMPF\varphi}$: selects any *v*P (vP_0,vP_1,vP_2)

What these lexical entries provide is a way to distinguish between two perfective Asp heads, (46a) and (46b). The first of these, which does not bear a φ-probe, can only combine with a *v*P which contains no DSP objects. The second of these, which does bear a φ-probe, can

[13] For simplicity I have omitted *tm*- as the head of PerfP in this derivation; I assume that in step (f), Perf spells out as *tm*- when its sister is an AspP whose head is perfective but has been activated by LR.

only combine with a *v*P which contains at least one DSP object. Asp_{IMPF} always carries a φ-probe, as in earlier analyses of Senaya (Kalin and van Urk 2012). Assuming an account of the verbal morphology which reflects the presence or absence of a φ-probe on Asp (rather than the semantic aspect of the Asp head), §1.3.3, this will correctly derive the appearance of the imperfective base when there is a DSP object in the perfective, but the appearance of the perfective base when there is no DSP object.

Such an account, however, runs into several problems. First, it is not clear how plausible it is for *v*P to encode its (DSP) arguments in the way needed for this account: are there any independent properties of these *v*Ps that indicate that they are different sizes structurally? Second, when the Prog head is considered, it is much harder to characterize the local environments in which Prog contains a φ-probe (while not being progressive). Just like Asp, Prog must be sensitive to *v*P size ($v\text{P}_0$,$v\text{P}_1$,$v\text{P}_2$), in that non-progressive Prog_φ can only occur in a clause with $v\text{P}_2$; in other words, the only way to get a 'fake' progressive is when there are two DSP objects. However, Prog is not local to *v*P the way that Asp is, so the selection of $v\text{P}_2$ by non-progressive Prog would have to be long distance. Finally, if the first two problems can be resolved, then this selectional account may turn out to work well for Senaya, but the account cannot straightforwardly be extended to other extremely similar last resort phenomena in languages with Person Case Constraint repairs.

The selection account has a major advantage over the last resort probe account: it does not introduce a new mechanism into the grammar, designed specifically to deal with last resort phenomena. Deciding between these proposals, or alternatively, finding a new way to account for Senaya's last resort phenomena, is left open for future research.

Conclusion

In this paper, I have demonstrated that there are two last resort phenomena in Senaya which cannot straightforwardly be captured in existing last resort frameworks. I proposed two potential ways to account for this: (i) a last resort probe analysis, in which Senaya's two last resort heads – Asp and Prog – are endowed with an LR probe that searches its c-command space for DSP objects which have not yet agreed; and (ii) a selectional analysis, in which different versions of Asp select different sizes of *v*P. Both accounts have their problems, but merit further research, in particular to see whether either offers improved empirical coverage over previous accounts of last resort phenomena.

Acknowledgements

My biggest thank you goes to Laura McPherson and Kevin Ryan for sharing their fieldwork on Senaya with me and inviting me to participate as well; Laura especially has been an invaluable resource for her insight into Senaya and her infinite generosity with her time. The figure in (9) replicates an organization of the data originally suggested by Kevin. Big thanks also go to Byron Ahn, Anoop Mahajan, Omer Preminger, Carson Schütze, Coppe van Urk, and Martin Walkow for extremely helpful discussions about this research. Finally, thank you to my Senaya consultant Paul Caldani for sharing his language with me. This research is supported by the National Science Foundation Graduate Research Fellowship Program.

References

Anagnostopoulou, Elena. 2003. *The syntax of ditransitives: Evidence from clitics*. The Hague: Mouton de Gruyter.

Béjar, Susana, and Milan Rezac. 2003. Person licensing and the derivation of PCC effects. In *Romance linguistics: theory and acquisition*, ed. Ana Teresa Pérez-Leroux and Yves Roberge, 49–62. John Benjamins.

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

Bonet, Eulàlia. 1991. Morphology after syntax: Pronominal clitics in Romance languages. Doctoral Dissertation, MIT.

Chomsky, Noam. 1991. Some notes on economy of derivation and representation. In *Principles and parameters in comparative grammar*, ed. Robert Freidin, 417–454. Cambridge, MA: MIT Press.

Coghill, Eleanor. 1999. The verbal system of North-Eastern Neo-Aramaic. Doctoral Dissertation, University of Cambridge, England.

Comrie, Bernard. 1976. *Aspect: An introduction to the study of verbal aspect and related problems*. Cambridge: Cambridge University Press.

Coon, Jessica. 2010. Complementation in Chol (Mayan): A theory of split ergativity. Doctoral Dissertation, Massachusetts Institute of Technology, Cambridge, MA.

Coon, Jessica, and Omer Preminger. 2011. Towards a unified account of person splits. In *Proceedings of the 29th West Coast Conference on Formal Linguistics (WCCFL 29)*. Somerville, MA: Cascadilla Press.

Dayal, Veneeta. 2011. Hindi pseudo-incorporation. *Natural Language and Linguistic Theory* 29:123–167.

Doron, Edit, and Geoffrey Khan. 2012. The typology of morphological ergativity in Neo-Aramaic. *Lingua* 122:225–240.

Halle, Morris, and Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In *The view from building 20*, ed. Kenneth Hale and Samuel Jay Keyser, 111–176. Cambridge, Massachusetts: MIT Press.

Halpert, Claire. 2011. Case, agreement, EPP, and information structure: a quadruple dissociation in Zulu. In *Proceedings of the 29th West Coast Conference on Formal Linguistics (WCCFL 29)*. Cascadilla Press.

Hoberman, Robert. 1989. *The syntax and semantics of verb morphology in Modern Aramaic*. New Haven, Connecticut: American Oriental Society, Publishing Nexus Inc.

Kalin, Laura, and Laura McPherson. 2012. Senaya (Neo-Aramaic): Structural PCC effects in progressives. Poster presented at WCCFL 30, UC Santa Cruz.

Kalin, Laura, and Coppe van Urk. 2012. A novel aspect split in Senaya. Poster presented at GLOW 35, University of Potsdam.

Khan, Geoffrey. 2002. *The Neo-Aramaic dialect of Qaraqosh*. Leiden: Brill.

Khan, Geoffrey. 2008. *The Neo-Aramaic dialect of Barwar: Grammar*, volume 1. Leiden: Brill.

Krotkoff, Georg. 1982. *A Neo-Aramaic dialect of Kurdistan: Texts, grammar, and vocabulary*. New Haven, Connecticut: American Oriental Society.

Lasnik, Howard. 1981. Restricting the theory of transformations: A case study. In *Explanation in linguistics: the logical problem of language acquisition*, ed. Norbert Hornstein and David Lightfoot, 152–173. London: Longman.

Massam, Diane. 2001. Pseudo noun incorporation in Niuean. *NLLT* 19:153–197.

McPherson, Laura, Kevin Ryan, and Laura Kalin. 2012. Senaya fieldnotes. Fieldnotes gathered from 2010 to 2012.

Preminger, Omer. 2011. Agreement as a fallible operation. Doctoral Dissertation, Massachusetts Institute of Technology, Cambridge, MA.

Rezac, Milan. 2011. *Phi-features and the modular architecture of language*, volume 81 of *Studies in Natural Language and Linguistic Theory*. Springer.

Schütze, Carson. 2003. When is a verb not a verb? *Nordlyd* 31:400–415.

Walkow, Martin. 2012. Goals, big and small. Doctoral Dissertation, University of Massachusetts, Amherst.

Affiliation

Laura Kalin
University of California, Los Angeles
laura.kalin@gmail.com