

TP SERIALIZATION IN MALAGASY*

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We discuss a class of verbal constructions in Malagasy (W. Austronesian, Madagascar, VOS) that look a lot like serial verb constructions (SVCs), but do not behave quite like the classical SVCs in West Africa and Southeast Asia. Malagasy SVCs differ from better known SVCs in that the predicates in the serialization may take independent complements, adverbs, and negation. We propose that the differences between Malagasy and classical verb serializing languages lie in the fact that Malagasy serializes high up, at the TP level, while other SVC languages serialize lower down, at AGRP or VP.

1. Introduction

In this paper, we study a construction in Malagasy (W. Austronesian, Madagascar, VOS) that we call a Serial Tense Phrase (STP), exemplified in (1).^{1,2}

- (1) a. [Misakafo] [mitsangana] Rabe
PRES.AT.eat PRES.AT.stand Rabe
'Rabe eats standing.' ~ Lit: 'Rabe eats stands.'
b. [Niandrandra ny lanitra] [niangavy famonjena] aho
PST.AT.look-up-at DET sky PST.AT.ask-for help 1.NOM
'I looked up at the sky asking for help.' ~ Lit: 'I looked up at the sky asked for help.'³

Using evidence from the range of such constructions that are possible, we argue that the observed phenomenon in (1) is an instance of adjunction-type serialization at the level of TP.

Notably, STPs differ from the classical serial verb constructions (SVCs) of West Africa and Southeast Asia in that the predicates in an STP may take independent complements, adverbs,

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¹ List of abbreviations: 1 = first person, 2 = second person, 3 = third person, ACC = accusative, AT = Actor Topic, CAUS = causative, CT = Circumstantial Topic, DEM = demonstrative, DET = determiner, EXCL = exclusive, FOC = focus, FUT = future/irrealis, GEN = genitive, NEG = negation, NOM = nominative, NPI = negative polarity item, PL = plural, PRES = present, PROG = progressive, PST = past, RECIP = reciprocal, RTP = root passive, SG = singular, STP = serial tense phrase, SVC = serial verb construction, TT = Theme Topic.

² Nearly all of our examples of grammatical STPs were taken from written Malagasy sources rather than elicited.

³ Following this example, sentences in Malagasy will be accompanied only by literal translations, with connectors (for English well-formedness) in parentheses.

and negation, while those in an SVC may not (see, e.g., Roberts 2009). We propose that the differences between SVCs and STPs arise from the level of serialization—specifically, STPs involve serialization at a high level, TP, while SVCs involve serialization at a lower level, VP or AGRP.

The paper will be laid out as follows. In section 2, we introduce the Malagasy data that illustrates TP serialization, observe correlations across sentences of this type, and establish the constituency and syntactic category of STPs. In section 3, we argue against the first obvious analysis of this construction—covert coordination—by showing that there are many restrictions on the predicates in an STP that are not restrictions on those in a coordination. Section 4 presents our analysis of STPs as involving adjunction at the level of TP, and we draw a connection between Malagasy’s STPs and classical SVCs. Finally, section 5 concludes.

2. Serialization in Malagasy

This section begins with a brief overview of basic Malagasy syntax – its word order, its ‘voice’ system, and the position of verb phrase adjuncts. We then introduce our inclusion and exclusion criteria for selecting what we call STPs, followed by representative examples of the STPs themselves and the correlations we observe across them. We wrap up the section by establishing that the category of an STP is TP and that each constituent involved in the serialization is also a TP.

2.1. Basic Properties of Malagasy

Malagasy is a predicate-initial/VOS language, as illustrated in (2) with an intransitive verb phrase, (2a), and an adjective phrase, (2b), predicates bracketed:

- (2) a. [_{VP} Mihira] ny vehivavy
 PRES.AT.sing DET woman
 ‘The woman sings/is singing.’
 b. [_{AP} Hendry] Rabe
 smart Rabe
 ‘Rabe is smart.’

The clause-final ‘subject’ is in a topic (A’) position, hence it will be referred to as a subject/topic in the remainder of this paper. (See, e.g., Pearson 2005.)

The role of the subject/topic in the matrix predicate is indicated via ‘voice’ morphology on the verb. Voices include Actor Topic (AT; (3a)), where the underlying agent appears in topic position, Theme Topic (TT; (3b)), where the underlying theme appears in topic position, and Circumstantial Topic (CT; (3c)), where an underlying oblique appears in topic position.⁴

- (3) a. [Manasa lamba amin’ ny savony] Rabe
 PRES.AT.wash clothes with the soap Rabe
 ‘Rabe washes clothes with soap.’

⁴ These sentences have intentionally all been given the same loose translation. Though it may be argued that TT and CT are a sort of passive, there is no significant statistical prominence of AT sentences, and we believe that there is no sense in which TT or CT is ‘derived’ from underlying AT (Keenan and Manorohanta 2001).

- b. [Sasan-dRabe amin' ny savony] ny lamba
PRES.TT.wash-GEN.Rabe with the soap the clothes
'Rabe washes clothes with soap.'
- c. [Anasan-dRabe lamba] ny savony
PRES.CT.wash.-GEN.Rabe clothes the soap
'Rabe washes clothes with soap.'

The voice morphology on the verb determines which argument is promoted to the subject/topic position. A final note here is that, as can be seen in (3a,b) with the instrumental *amin'ny savony* ('with soap'), verb phrase adjuncts appear following the verb and its arguments, before the subject/topic.

2.2. Serial Tense Phrases: Data Patterns

In selecting data to consider in this study, we used several inclusion and exclusion criteria. We included any sentence which contained at least two predicates that were not separated by means of any (overt) subordinator or coordinator. We further required that the whole sentence be within a single intonation contour (when read by our consultant). We excluded sentences in which the series of predicates seemed to compose a fixed or idiomatic compound. We also excluded predicates that seemed to be in a selectional relationship (e.g., verbs of intent/desire,⁵ auxiliary-like verbs, canonical 'object-control' verbs, and purpose clauses).⁶

2.2.1. Structural Patterns

Given the above criteria, the following structural patterns emerged: (i) serialized predicates can be bare, (4); (ii) serialized predicates can contain objects, (6); (iii) negation and adverbs can scope over just one predicate in a serialization, (8); and (iv) negation and adverbs can scope over the whole serialization, (10). We will look at each of these in turn.⁷

Verbs alone can appear in a series of two or more (though we only found natural examples of up to three), as indicated in the templates in (4) and exemplified in (1a) as well as (5).

- (4) a. [V] [V] Subj/Top (1a)
 b. [V] [V] [V] Subj/Top (5)
- (5) [Nihohoka] [nitomany] [nigogogogo] Ramavo
 PST.AT.prostrate PST.AT.cry PST.AT.sob Ramavo
 'Ramavo prostrated herself (and) cried (and) sobbed.'

Each verb in a serialized predicate can also take its own (non-shared) object, as indicated in (6). The introduction gives an example of one such construction, (1b), and another is given in (7).

⁵ The selectional relationship between predicates is most clearly seen in the class of verbs of intent/desire, which require that their complement bear the future tense/irrealis marker *h(o)-*.

⁶ With these criteria, we are purposefully excluding certain sentences that may well turn out to be STPs of a different type than the one we focus on. See Paul and Ranaivoson 1998 for more on these types of complex verbal constructions.

⁷ Note that the absence of a template from our lists does not mean that the configuration is impossible, just that we did not encounter any naturally-occurring example of that template in a Malagasy text.

- (6) a. [V] [V O] Subj/Top
 b. [V O] [V] Subj/Top (7)
 c. [V O] [V O] Subj/Top (1b)

- (7) [Nitsikitsiky] [nijery anay] Rakoto
 PST.AT.smile PST.AT.look-at 1.PL.EXCL.ACC Rakoto
 ‘Rakoto smiled (while he) looked at us.’

Crucially, the object of the second verb in (7), *anay* (‘us’), is not shared by the first verb; (7) does not have the interpretation ‘Rakoto smiled at us while he looked at us.’

Adverbs and negation (*tsy*) can scope over individual predicates in the series:

- (8) a. [V] [V Adv] Subj/Top (9a)
 b. [V] [NEG V] Subj/Top
 c. [V O] [NEG V] Subj/Top (9b)
 d. [NEG V] [NEG V] Subj/Top (9c)
- (9) a. [Nihanahana] [nijery fotsiny] ny sasany
 PST.AT.hesitate PST.AT.look-at only DET some
 ‘Some even hesitated (and) only watched.’
 b. [Miray trano] [tsy mifampiteny] izy
 PRES.AT.occupy house NEG PRES.REC.AT.speak 3.NOM
 ‘They live in the same house (and) don’t speak with each other.’
 c. [Tsy niteny] [tsy nivolana] izy
 NEG PST.AT.speak NEG PST.AT.speak 3.NOM
 ‘They didn’t speak (and) didn’t speak.’

(9a) shows an adverb (*fotsiny*, ‘only’) scoping over just the second predicate, though it is in the correct position to scope over both predicates, as will be seen in (10)/(11). (9b) shows negation scoping over just the second predicate; this is unambiguously consistent with its pre-predicate position. Finally, (9c) shows negation appearing twice, once in each predicate.

Adverbs and negation may, however, scope over both predicates, as seen in (10) and (11).

- (10) a. [[V V] Adv] Subj/Top (11a)
 b. [NEG [[V O] [V]]] Subj/Top (11b)
- (11) a. [[Nitomany nigogogogo] indray] izy rehetra
 PST.AT.cry PST.AT.sob again 3.NOM all
 ‘Again they all cried (and) sobbed.’
 b. [Tsy [[hahalany andro] [handihy]]] ny ankizy
 NEG FUT.CAUS.AT.exhaust day FUT.AT.dance DET children
 ‘The children will not exhaust/spend the day dancing.’

It is particularly striking that the adverb in (11a) is interpreted as scoping over both predicates while a nearly identical string (V V Adv) in (9a) has the adverb scoping over just the second predicate;

the determining factor for the interpretation seems to be context and plausibility, but it is clear that an adverb in this position may take narrow or wide scope. Negation has the same property: clause-initially it can either scope over just the adjacent predicate (as in (9c)), or it can scope over both predicates, (11b).

A final structural note is that each predicate in a series can be quite internally complex, as illustrated in the following sentence:

- (12) [Nihazakazaka sy niverimberina] [niakatra sy nidina] ny
 PST.AT.run-around and PST.AT.go-back-forth PST.AT.go-up and PST.AT.go-down DET
 mirahalahy
 brothers
 ‘The brothers ran around and went back and forth (and) went up and down.’

This is a serialization of two conjoined verbs with two conjoined verbs. It is clear from the range of patterns observed and the variety of predicates involved that serialization is a robust and versatile phenomenon in Malagasy.

2.2.2. Semantic Patterns

In addition to structural recurrences across the sentences picked out by our inclusion and exclusion criteria, there are semantic observations to make. First, the predicates in a series need not be verbal:

- (13) [Adala] [hendry] izy
 crazy wise 3.NOM
 ‘He is crazy (but) wise.’

In (13), the two predicates in the series are adjectival, unlike those we encountered above.

Second, predicates in a serialization are always able to stand alone as the sole predicate of a clause, and their meanings are basically the same in isolation as in the serialization ((14a) repeated from (1a)):

- (14) a. [Misakafo] [mitsangana] Rabe
 PRES.AT.eat PRES.AT.stand 3.NOM
 ‘Rabe eats (while he) stands.’
 b. [Misakafo] Rabe
 PRES.AT.eat 3.NOM
 ‘Rabe eats.’
 c. [Mitsangana] Rabe
 PRES.AT.stand 3.NOM
 ‘Rabe stands.’

Both *misakafo* and *mitsangana* are full-fledged, fully inflected, finite verbs on their own. We did not find any case where a predicate involved in an STP lacked this property.

Third, the predicates involved in a serialization are frequently synonyms (or near synonyms) and are thus reversible. In a Malagasy novel, (15b) occurs within three pages of (15a):

- (15) a. [Nitomany] [nigogogogo] izy rehetra
 PST.AT.cry PST.AT.sob 3.NOM all
 ‘They all cried (and) sobbed.’
 b. [Nigogogogo] [nitomany] izy rehetra
 PST.AT.sob PST.AT.cry 3.NOM all
 ‘They all cried (and) sobbed.’

The switching of the predicates does not result in any significant meaning change. Examples where two predicates were roughly equivalent in meaning composed around one quarter of the serialization examples that we found in Malagasy texts.

Finally, predicates in a serialization cannot semantically share an object:

- (16) a. *[Manafana manaro ny romazava] aho
 PRES.AT.heat PRES.AT.stir DET broth 1.NOM.SG
 ‘I’m heating and stirring the soup.’
 b. *[Manafana ny romazava manaro] aho
 PRES.AT.heat DET broth PRES.AT.stir 1.NOM.SG
 ‘I’m heating and stirring the soup.’

Whether the object follows the second predicate, (16a), or comes in between the predicates, (16b), the result is ungrammatical.⁸ Coordination of tensed transitive verbs with a shared object, on the other hand, is quite common, as will be seen in section 3, example (31).

2.2.3. Patterns of Parallelism

The final set of observed correlations involves obligatory parallelisms across the predicates in a serialization. First, all the predicates in the serialization must be overtly marked for the same tense, and are ungrammatical otherwise:

- (17) a. [Nipetraka] [nangina] izy ireo
 PST.AT.sat PST.AT.be-quiet 3.NOM PL.DEM
 ‘They sat (and) were quiet.’
 b. *[Mipetraka] [nangina] izy ireo
 PRES.AT.sat PST.AT.be-quiet 3.NOM PL.DEM
 Intended: ‘They are sitting (and) were quiet.’
 c. *[Nipetraka] [mangina] izy ireo
 PST.AT.sat PRES.AT.be-quiet 3.NOM PL.DEM
 Intended: ‘They sat (and) are being quiet.’

(17b,c) are ungrammatical due to a mismatch in tense between the predicates.

⁸ This is just one example from a series of failed attempts to construct a grammatical STP with a shared object; our speaker rejected all of our attempts. Further, we did not find a single example (in a Malagasy text) of an object-sharing serialized predicate, unless it was already ruled out by one of our inclusion and exclusion criteria, which do not impose any such restriction *a priori*.

A second parallelism is that all verbs that mark voice must be marked for the same voice, Actor Topic (AT), and are ungrammatical otherwise:

- (18) *[Isaorana] [arahabaina] Rabe
 PRES.TT.thank PRES.TT.congratulate Rabe
 Intended: ‘Rabe is being thanked (and) congratulated.’

Though (18) observes all the other constraints on serialized predicates given in this section, the Theme Topic form of the verb results in ungrammaticality.⁹

The final observed parallelism is that the predicates in a serialization must share the same subject/topic, expressed as a single DP; the sentence is ungrammatical otherwise:

- (19) a. [Nifamikitra] [nitomany] ny mirahavavy
 PST.RECIP.AT.hold-on PST.AT.cry DET sisters
 ‘The sisters held on to each other (and) cried.’
 b. *[Nifamikitra] ny mirahalahy [nitomany] ny mirahavavy
 PST.RECIP.AT.hold-on DET brothers PST.AT.cry DET sisters
 Intended: ‘The brothers held on to each other (and) the sisters cried.’

In (19b), each predicate in the series illicitly has its own subject.

In sum, STPs must be parallel in tense marking and voice marking (all AT) and must share a subject. The next logical question to address is: what is the syntactic category of the predicates involved in so-called STPs, and what is the category of the STP as a whole?

2.3. The Syntactic Category of STPs

STPs as a whole, as well as each predicate in an STP, undergo processes that affect TPs, in particular, in taking predicate-framing particles. Malagasy has several sets of predicate-framing particles, which frame the TP of a clause, excluding only the subject/topic (Pearson 2005). The general schema for predicate-framing particles X and Y is shown in (20), exemplified in (21) with the particle sets *tsy...intsony* (‘not...any longer’) and *na dia...aza* (‘even...though’):

- (20) [X [Predicate] Y] Subject/Topic
- (21) a. [Tsy [mianatra teny vahiny] intsony] Rabe
 NEG PRES.AT.study language foreign any-longer Rabe
 ‘Rabe doesn’t study foreign languages any longer.’
 b. [Na dia [vizaka be] aza] Rabe, ...
 Even tired very though Rabe
 ‘Even though Rabe is very tired, ...’

⁹ This is just one example from a series of failed attempts to construct a grammatical STP with one or more of the verbs in TT or CT form; our speaker rejected all of our attempts. Further, we did not find a single example (in a Malagasy text) of a TT, CT, or voice-mismatched serialized predicate, unless it was already ruled out by one of our inclusion and exclusion criteria, which do not impose any such restriction *a priori*.

The ‘X’ particle in (21a) is the negation morpheme, *tsy*, while the ‘Y’ particle is the Negative Polarity Item (NPI) *intsony* (‘any longer’). The ‘X’ particle in (21b) is *na dia*, while the ‘Y’ particle is *aza*, creating a concessive construction (Keenan 1976).

This first predicate-framing set, *tsy...intsony* (‘not...any longer’), is seen surrounding two serialized predicates in (22):

- (22) [Tsy [[nitsikitsiky] [nijery anay]] intsony] Rakoto
 NEG PST.AT.smile PST.AT.look-at 1.PL.EXCL.ACC any-longer Rakoto
 ‘Rakoto didn’t smile (or) look at us any longer.’

The serialized [V] [VO] sequence is flanked by predicate-framing particles, which scope over both predicates in the serialization. The scopal and positional facts suggest that the two serialized predicates form a single predicate constituent, and moreover, that this larger predicate is of the same category as a simple (non-serialized) predicate; the serialization in (22) is behaving syntactically and semantically as a simple predicate.

Predicate-framing particles also may appear within a serialization, flanking just one predicate in the serialization, as seen in (23), again with the particles *tsy...intsony* (‘not...any longer’):

- (23) [Nifamikitra] [tsy [nitomany] intsony] ny mirahavavy
 PST.RECIP.AT.hold.onto NEG PST.AT.cry any-longer DET sister
 ‘The sisters held onto each other (and) didn’t cry any longer.’

The second predicate in the two-predicate serialization is under the scope of the predicate-framing particles. In a three-predicate serialization, predicate-framing particles may appear flanking a subset of the predicates in the serialization:

- (24) [Nijononka miadana] [tsy [[nifafy] [niditra]] intsony] ny ranonorana
 PST.AT.flow peacefully NEG PST.AT.scatter PST.AT.penetrate any-longer DET rainwater
 ‘The rainwater flowed peacefully (and) didn’t scatter (or) penetrate any longer.’

The second two predicates are under the scope of the predicate-framing particles, while the first predicate in the serialization is not. The scopal and positional facts from (23) and (24) suggest that each predicate in a serialization is of the same category as a simple (non-serialized) predicate, (23); further, certain subgroupings of predicates in a three-predicate serialization (namely, the latter two predicates) form a constituent to the exclusion of the first predicate and this constituent is also of the same category as a simple (non-serialized) predicate, (24).

Finally, (25) shows that these possibilities (wide and narrow(er) scope predicate-framing particles) are not mutually exclusive:

- (25) ... na dia [[efa lasa] [tsy hita intsony]] aza **izy**
 even already RTP.go NEG RTP.see any-longer though 3.NOM
 ‘...even though they were already gone (and) not seen any longer.’

The particle set *tsy...intsony* (‘not...any longer’) surrounds a single predicate in this serialization, while the serialization as a whole is surrounded by the concessive set *na dia...aza* (‘even...though’).

The data from this section indicate that each predicate in an STP is a TP, the whole predicate is an STP, and certain intermediate groupings of predicates in a three-predicate STP are also TPs.

2.4. Not a Root Clause Stylistic Phenomenon

To wrap up the presentation of serialization in Malagasy, we show here that STPs are not simply a stylistic root clause phenomenon. STPs may appear in a broad range of constructions, including relative clauses, (26a), nominalizations, (26b), and pseudoclefts, (26c).

- (26) a. ny olona izay [misakafo mitsangana]
 DET people COMP PRES.AT.eat PRES.AT.stand
 ‘the people who eat (while they) stand’
 b. ny [misakafo mitsangana]
 DET PRES.AT.eat PRES.AT.stand
 ‘those who eat (while they) stand’
 c. Vololona no [mihinina mitsangana]
 Vololona FOC PRES.AT.eat PRES.AT.stand
 ‘It is Vololona who eats (while she) stands.’

This is only a small sampling of the types of constructions STPs appear in. In general, we have found they may appear wherever simple predicates may appear.

2.5. Interim Conclusions

This section has shown that serialization is a robust phenomenon in Malagasy. The key observed properties are: (i) STPs permit predicates to take their own complements, adverbs, and negation; (ii) STPs do not permit predicates to share an object; (iii) STPs exhibit parallelism in tense, voice (AT), and subject/topic; (iv) STPs as a whole as well as the predicates composing STPs are TPs.

3. Against a covert coordination analysis

One possible analysis of the observed phenomenon in Malagasy is that it is not serialization at all, but rather covert coordination, i.e., coordination without an overt coordinator. In this section, we argue against this analysis by showing that coordination in Malagasy does not impose strict parallelism constraints on the elements being coordinated, while serialization in STPs does.

Malagasy is rich in coordinators of various sorts, including *ka* (‘and so, as a result’), *nefa* (‘but’), *kanefa* (‘but’), *na* (‘or’), and *sa* (‘or (in questions)’). The two most basic coordinators, which will be the focus of this section, are *sy* (‘and’), which serves to coordinate any XPs smaller than a whole sentence, and *ary* (‘and’), which serves to coordinate sentences. Is there a null *ary* or *sy* in STPs? There are at least four reasons to believe that there is not.

First, coordinations do not need to match in tense:

- (27) [[Nosoratako] sy [ho tiako mandrakariva]] io tononkalo io
 PST.TT.write.1.SG.GEN and FUT TT.like.SG.GEN always DEM poem DEM
 ‘The poem was written by me and will always be liked by me.’

The two verbs above are in different tenses—past tense on the first verb, future/irrealis on the second verb—and yet the sentence is completely grammatical. As we saw in (17), this is not the case in a serialization, in which case the verbs must match in tense.

Second, coordinations do not need to be in AT voice:

- (28) [[Novidiko] sy [nohaniko]] ny vary
 PST.TT.buy.1SG.GEN and PST.TT.eat.1SG.GEN DET rice
 ‘The rice was bought by me and eaten by me.’

The parallel TT form of the two verbs in (28) is grammatical, whereas this is impossible in an STP, as seen in (18). Further, coordinations have no voice-matching requirement at all, unlike STPs:

- (29) Inona no [[iriko] sy [hahafinaritra ahy]]?
 What FOC PRES.TT.desire.1.SG.GEN and FUT.AT.please 1.SG.ACC
 ‘What is it that I desire and will please me?’

The first verb in (29) is in TT form, while the second is in AT form; connected by the overt coordinator *sy*, this is grammatical. This would be impossible in an STP.

A third difference between STPs and coordination in Malagasy is that the members of a coordination may have independent subjects:

- (30) [Nipetraka ny ankizy] ary [nangina ny ray-aman-dreny]
 PST.AT.sat DET children and PST.AT.be-quiet DET father-and-mother
 ‘The children sat and the parents were quiet.’

The subject of the first predicate is *ny ankizy* (‘the children’), distinct from the subject of the second predicate, *ny ray-aman-dreny* (‘parents’). This is never possible in an STP, as was shown in (19).

The final main difference between STPs and coordinations is that two predicates in a coordination may share an object:

- (31) [[[Nanenjika] sy [nisambotra]] ny mpangalatra] ianao
 PST.AT.chase and PST.AT.capture DET thief 2.SG.NOM
 ‘You chased and caught the thief.’

The object *ny mpangalatra* (‘the thief’) is the object of both *nanenjika* (‘chase’) and *nisambotra* (‘capture’). Objects may not be shared in a serialization, as seen in (16).

The data in this section show that serialization in Malagasy cannot simply be an instance of covert coordination. Coordinations, unlike serializations, allow tense mismatches, voice mismatches, non-AT verbs, distinct subjects, and shared objects.¹⁰

¹⁰ Extraction tests ruling out covert coordination are not able to be tested in Malagasy, given the ‘topics only’ restriction on extraction (Keenan 1976). For example, it will never be possible to test whether an internal argument of the STP is extractable since this would necessitate a change in voice morphology, but STPs are only grammatical in AT voice.

4. A Syntactic Analysis of STPs

In this section we pursue an analysis of serialization in Malagasy that can account for (most of) the observed properties of STPs. We also show how STPs relate to classical SVCs and propose that the differences between the two boil down to the level at which serialization takes place.

4.1. The Structure of STPs

The first component of our analysis involves the node at which serialization takes place. From the range of possible serializations in section 2, it can be seen that the structural point of serialization must be able to include (minimally): (i) voice morphology; (ii) tense morphology; (iii) objects; (iv) adverbs; and (v) negation. These elements may appear within a single predicate in a serialization. The amount of structure excluded from each predicate in a serialization must be able to include (minimally): the subject/topic. These observations strengthen the conclusion from section 2.3 that an STP consists of TPs and is itself a TP, since the subject/topic is generally the only element that is obligatorily external to TP (Pearson 2005). We conclude that Malagasy serializes at TP.

STPs seem to be of the ‘adjunction’ type, as characterized by Larson (1991): one of the predicates can be seen as the central predicate, while the other predicates modify this predicate. The central predicate in Malagasy is the first in the series, given the general position of adjuncts in Malagasy (following the main predicate) and given the interpretation of STPs, which our consultant translated most naturally with the first predicate as central. In Larson’s terms, Malagasy STPs are similar to subject-oriented, depictive secondary predicates like that in (32a), interpreted as in (32b):

- (32) a. John left the party angry.
b. John left the party while he was angry.

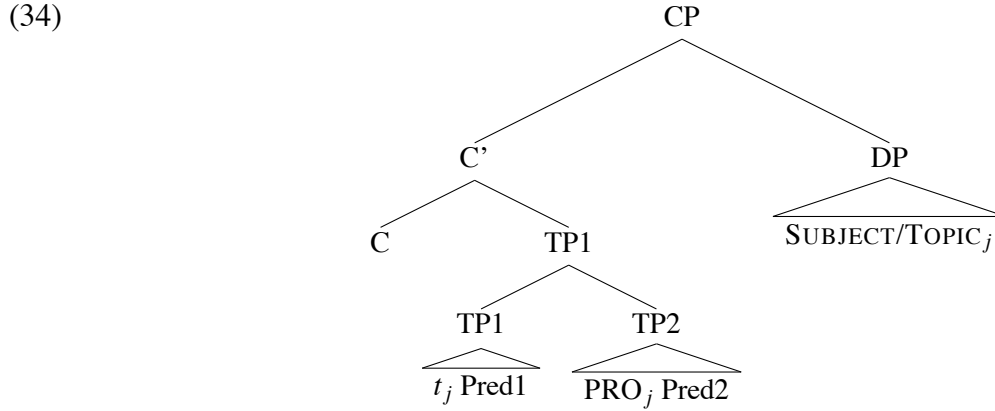
Like serializations in Malagasy, the non-central predicate in (32a), *angry*, is predicated of the subject and modifies the main predicate, *left the party*.

Another source of support for the adjunction analysis comes from the fact that the predicates in an STP do not seem to be in a selectional relationship with one another; as seen in section 2, predicates in an STP can be near synonyms and are often reversible. Paul and Ranaivoson (1998) look at several different types of complex verbal constructions in Malagasy and show that many of them can promote the second verb in a series to subject position, when the main verb is in CT form. However, this fails for serializations of the STP type (Paul and Ranaivoson 1998, p. 117):

- (33) a. Mikanakana miteny i Bozy (Complex verbal construction, STP type)
PRES.AT.stammer PRES.AT.speak DET Bozy
‘Bozy stammers (while she) speaks.’
b. *Iakanakanan’ i Bozy ny miteny (Promotion of second verb to subject)
PRES.CT.stammer DET Bozy.GEN DET PRES.AT.speak
Attempted: ‘To speak is stammered by Bozy.’

Since (33a) is unable to undergo the process attempted in (33b), unlike other complex verbal constructions, Paul and Ranaivoson conclude that constructions like those in (33a) “seem to form a natural class: the second verb acts more like a verbal modifier than a complement” (p. 117).

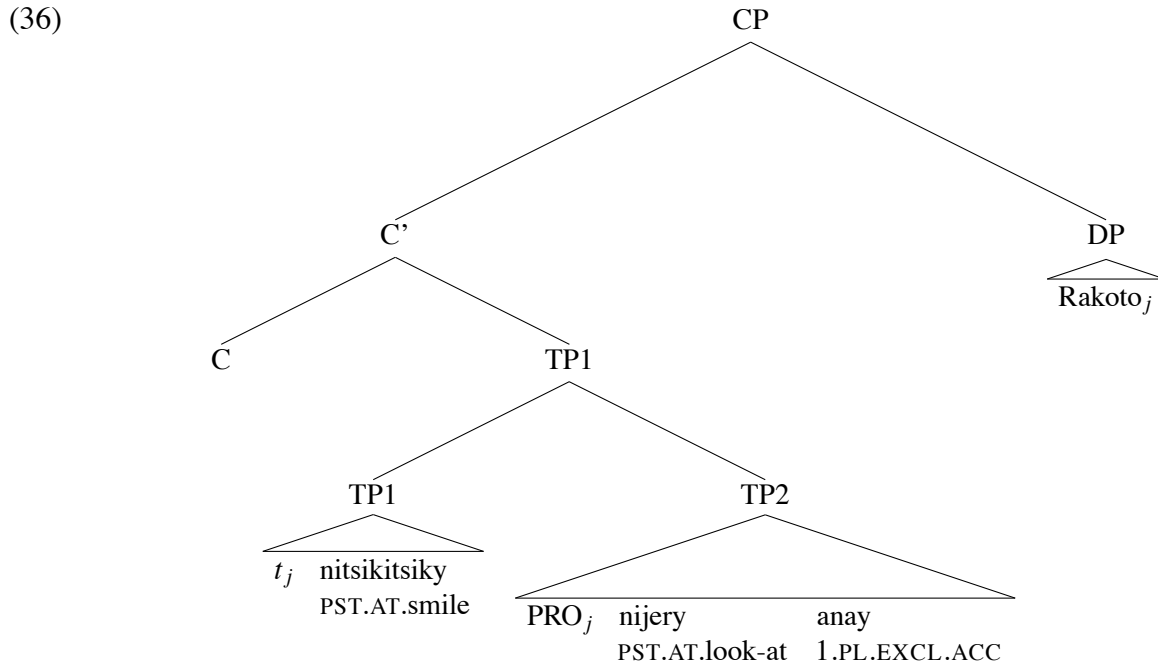
We therefore propose that serialization in Malagasy occurs at the TP level and involves adjunction of one TP to another TP. The A' subject/topic will naturally be shared across the TPs:



In this tree, TP1, the linearly precedent TP, is the matrix TP; hence, there is a trace of the subject/topic in an argument position.¹¹ TP2 adjoins to TP1 and contains a PRO in the highest thematic position, which gets its reference from the matrix subject/topic in spec-CP. This structure allows for recursion in two ways: another TP could adjoin to TP1, and TP2 could itself be an STP.

To give a concrete example, the tree in (36) represents the STP in (35), repeated from (7):

- (35) [Nitsikitsiky] [nijery any] Rakoto
 PST.AT.smile PST.AT.look-at 1.PL.EXCL.ACC Rakoto
 ‘Rakoto smiled (while) looking at us.’



¹¹ It is also possible that the subject/topic is base-generated as a topic and co-indexed with an empty category in TP1.

The matrix TP consists of the predicate *nitsikitsiky* ('smile'), with the TP *nijery anay* ('look at us') modifying this TP.¹² The first predicate contains the trace of the moved subject/topic, while the second predicate contains a PRO which is controlled by the matrix subject/topic.¹³

4.2. Accounting for the Observed Restrictions on STPs

The syntactic analysis presented above can account for some of the obligatory parallelisms in STPs. First of all, predicates in an STP must share a subject because subjects in Malagasy are never able to stay within TP; the subject always raises to a topic position above TP (Pearson 2005). Hence, an adjoined TP (crucially missing a CP layer) will not be able to contain its own (overt) subject; this subject would not be able to escape the TP to be licensed in a topic position. Adjoined TPs, then, are forced into containing a deficient subject PRO, which must take its reference external to TP.

Another parallelism is obligatory tense matching. We propose that the TPs in an STP must match in tense because they constitute a single event, with TP2 contained within TP1; as such, TP2 must have the same tense as TP1. This is observed in comparable English adverbials:

- | | |
|--|--------------------|
| (37) a. John [ate] [while he stood]. | ✓ PAST + PAST |
| b. John [ate] [while he was standing]. | ✓ PAST + PAST PROG |
| c. *John [ate] [while he stands]. | *PAST + PRES |
| d. *John [ate] [while he is standing]. | *PAST + PRES PROG |
| | |
| (38) a. John [eats] [while he stands]. | ✓ PRES + PRES |
| b. John [eats] [while he is standing]. | ✓ PRES + PRES PROG |
| c. *John [eats] [while he stood]. | *PRES + PAST |
| d. *John [eats] [while he was standing]. | *PRES + PAST PROG |

This effect in English seems to be mainly semantic, and whatever it is, this is what we think governs the tense matching in Malagasy serializations as well.

The final observed parallelism is the all-AT voice requirement. This restriction is the hardest to explain, and merits further research. One possibility is that TPs with a verb in AT are smaller structures than those in any other voice. If this is so, then perhaps the STP serialization targets just constituents of this size, effectively prohibiting verbs in any other voice. Other privileges enjoyed by verbs in AT form are that they can host reciprocal and causative morphology (while verbs in other voices may not), and that they take a unique *-a* marker in the imperative. In certain ways, then, AT may be differentiated from the other voices, and it may be this difference that results in their unique compatibility with TP serialization.

As a final note, there are no *a priori* restrictions on which verbs/predicates may appear together in an STP, though in general we expect them to be semantically and pragmatically compatible (i.e., able to be predicated of the same individual at the same time).

¹² It is possible that there is some null adverbial head facilitating the adjunction here, but we have not included this in the tree as there is no overt evidence for it.

¹³ We do not consider a feature copying analysis of STPs (i.e., serialization at a low level like VP with copying of voice and tense morphology from the matrix V onto the others) because this would not be able to explain why there is enough structure present to license independent complements, adverbs, and negation in each serialized predicate (unlike in SVCs).

4.3. A Connection with Classical SVCs

Fugier (1999) gives a brief description of serialization in Malagasy, and considers it equivalent to a classical SVC. In some ways, STPs do look a lot like classical SVCs in the literature. An example from Akan (W. Africa) is given in (39) (Schachter 1974):

- (39) Kofi kɔɔe baae
Kofi went came
'Kofi went and came.'

One subject, *Kofi*, is shared across two predicates, resulting in a coordination-like meaning.

STPs share the following properties of SVCs in particular (adapted from Roberts 2009):

- (40) STPs and SVCs: shared properties
- A prototypical SVC contains two or more morphologically independent verbs within the same clause, neither of which is an auxiliary.
 - There are no conjunctions or other overt markers of subordination or coordination separating the two verbs.
 - The serial verbs belong to a single intonation contour, with no pause separating them.
 - The entire SVC refers to a single (possibly complex) event.
 - A true SVC may contain only one specification for tense, though these features are sometimes redundantly marked on both verbs.
 - The two verbs in the SVC share at least one semantic argument.

In addition to these similarities, the analysis that we have proposed for STPs is similar to certain proposals for SVCs in the literature, namely in the use of *pro*/PRO to mediate argument sharing (e.g., Carstens 2002) and the use of an adjunction structure (e.g., Larson 1991).

Malagasy STPs also differ from classical SVCs in many respects. However, these differences may be seen to fall out from the high point of serialization in Malagasy (at TP) compared to the low point of serialization in classical serial verb languages (at VP). The major difference between classical SVCs and STPs is that the serialized predicates in an STP may have independent complements, adverbs, and negation, while predicates in an SVC may not. This follows from the fact that serialization in Malagasy is taking place at a higher structural node, TP, which may contain this expanded set of structural elements. Another difference is that STPs disallow internal argument sharing, while this is quite common in SVCs. This can be explained again by the high point of serialization in STPs as well as the adjunction structure: there is no point in the structure at which an internal argument of one of the TPs could control an argument in the other TP.

Other minor differences between STPs and classical SVCs are that the predicates in an STP are often near-synonyms and reversible, the predicates are always full-fledged inflected verbs that retain their canonical meaning, and the predicates need not contain a verb at all (e.g., they may be adjectival in nature, cf., (13)). All of these things follow from the TPs being (largely) independent from each other, and from anything that constitutes a TP being able to appear in a serialization.

In sum, SVCs and STPs involve many of the same underlying mechanisms, yet are distinct on the surface due to the different levels of structure at which they serialize (VP vs. TP).

5. Conclusion

In this paper, we investigated a particular type of serialization in Malagasy and argued that it is adjunction-type serialization of TP. This analysis concurs with the brief analysis given by Paul and Ranaivoson (1998), who study a broader range of verbal constructions. We further showed that Malagasy STPs are similar in many ways to SVCs, and that the ways they differ can be reduced to the node at which serialization takes place. SVCs are an areal syntactic feature, and it may be that Malagasy picked up this feature (via contact with Oceanic and African languages) and adapted SVCs into Malagasy grammar—verbs must always be fully inflected, and the A' position of the subject allows for argument-sharing across a larger amount of structure than in classical SVCs.

To conclude, we propose an integration of SVCs and STPs into a more general notion of serialization that incorporates serialization at different levels of structure; a language will be said to serialize over XPs if it has productive instances of at least one of the following schemata:

- (41) a. S1 = [_{XP} XP XP]
b. S2 = [_{XP} X XP]

Sentences fitting within this generalized characterization of serialization abound in Malagasy, in the form of S1 TP serialization, [_{TP} TP TP].

There are many further directions to take this research. First, why must both predicates in an STP be in AT voice? Second, does Malagasy have serialization of the S2 type? Lastly, what governs whether a language has serialization or not, and if so, at what level serialization occurs?

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