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The Verbal Phrase in Paraguayan Guarani: A Case Study on the Role of Prosody in Linearization

Maria Luisa Zubizarreta

Department of Linguistics, University of Southern California, Los Angeles, CA 90089-1693, USA;
zubizarr@usc.edu

Abstract: This paper examines in detail the morpho-syntax of the verbal phrase in Paraguayan Guarani, in root and complement clauses, and argues that while the ordering relation between the verb and its associated functional morphemes is congruent with the syntax (cf. the Mirror Principle), the ordering of post-verbal arguments is best understood in terms of phonological linearization. More specifically, it is argued that there are language-particular prosodic requirements that force the post-verbal arguments to be phonologically linearized outside the accentual domain defined by the verb and its associated functional morphemes.

Keywords: Paraguayan Guarani; morpho-syntax; prosody; word order

1. Introduction

This paper is a formal study of the morpho-syntax of the verbal phrase in Paraguayan Guarani (PG) and the role of prosody in determining the linearization of post-verbal arguments. Although the study has implications for a wide variety of clausal structures, its main focus will be root clauses and the clausal declarative complement of attitudinal verbs introduced by the subordinating conjunction *ha*.

PG belongs to the Tupian-Guarani family of languages, itself one of many language families of the eastern branch of Proto-Tupian (for a general introduction to Tupian, see [Rodrigues and Cabral \(2012\)](#)). PG has the particularity that it has been in close contact with Spanish for many centuries and we have yet to uncover its effects on the grammar of present-day PG.

The language is a pro-drop language with significant word order variation in the clausal domain. Although there is still no dedicated study on the information structure of present-day PG, our preliminary observations suggest that informationally new, non-topical information is located in the post-verbal position¹, although any constituent regardless of its position can be prosodically focused. We will therefore assume that the VP is head initial in present-day PG (Section 2.1).²

Question phrases appear preverbally followed by a Q(uestion) marker (unstressed clitic *-pa* or *piko*). If we assume that Q is located in the Comp that marks the scope of the question and is responsible for attracting wh-phrases to the pre-verbal position, it would suggest that Comp is also head initial, although nothing we will have to say in this paper hinges on this theoretical assumption.

Our focus here is on the verbal domain, with special attention to the verbal domain in the clausal complement of attitude verbs. Such complements are introduced by the subordinator *ha* (optionally, with some verbs). While low-manner and aspectual adverbs may (or, in some cases, must) appear between V and the subordinator *ha*, speaker-oriented adverbs and temporal/locative indexicals must appear after *ha*. This suggests that the subordinator *ha* is rather low in the syntactic structure, a conclusion that is further reinforced by the distribution of evidentials and high aspectual morphemes. We thus arrive at the conclusion that the subordinator *ha* combines with the embedded VP (and its extended



Citation: Zubizarreta, Maria Luisa. 2022. The Verbal Phrase in Paraguayan Guarani: A Case Study on the Role of Prosody in Linearization. *Languages* 7: 0. <https://doi.org/>

Academic Editor: Bruno Estigarribia

Received: 6 September 2021

Accepted: 21 April 2022

Published: 3 August 2022

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projections (Fu)). (Note that although *ha* itself does not sit in Comp, we could think of it as being part of a discontinuous complementizer: *Comp ... ha*, where the Decl(arative) Comp is in complementary distribution with the Q-bearing Comp.) On the other hand, it is puzzling that post-verbal arguments must appear after the subordinator *ha*, along with non-low adverbs (1).³ The arguments of the verb, including generic bare nominal Objects, cannot appear between V and the subordinator *ha* (2). We will present evidence that the Adverbs that appear between V and *ha* in (2b) must be analyzed as phrases (rather than as heads embedded within a complex verb) and therefore the generalizations in (2) call for an explanation.⁴

- (1) [Verb [_{CP} ... [_{VP} V ... *ha*] (XP)] XP = argument, non-low adverbs (possible)
- (2) a. [... [[_{VP} V (XP)] (Fu)] *ha*]] XP = argument, non-low adverbs (not possible)
 b. [... [[_{VP} V (XP)] (Fu)] *ha*]] XP = low adverbs (possible)

We will furthermore argue that the generalizations in (2) can be readily accounted for in terms of a prosodic constraint. We will show that the VP and the subordinator *ha* typically form one accentual phrase or AP, although considerations pertaining to rhythmic synchrony may give rise to a split in longer cases (to be discussed). This prosodic constraint can be attributed to the following *Prosodic Closeness Requirement*, or PCR (Sections 4 and 5).

- (3) *Prosodic Closeness Requirement* (PCR): The subordinator *ha* must be prosodically close to the verbal unit to its left, i.e., it must form a single accentual phrase or AP, with *ha* as the head of the AP (core cases).

We have found that in PG, as in other AP languages, an XP argument must constitute its own AP, and it is precisely for that reason that the PCR excludes the structure in (2a). On the other hand, all the material between V and *ha*, including low XP adverbs, typically form one single AP, with the pitch accent on the rightmost stressed syllable *ha*, thus satisfying the PCR. (As we will see, such APs can be unusually long, with more than one stressed word, but one single pitch accent.) We argue that the PCR has important consequences for the linearization of XP arguments in subordinate structures. In order to allow for compliance with the PCR, an overt XP argument in (2a) must undergo *phonological displacement*.

Taking a broader view, we then suggest that the PCR is most likely not specific to the subordinator *ha*. Although we have not done any detailed prosodic analysis of other subordinating conjunctions, preliminary observations suggest that the PCR most likely generalizes to verbal structures across different clausal types. The picture that emerges is that the PCR and its associated *phonological XP-displacement* mechanism are driven by a tendency to *maximize the AP-phrasing of the predicative verbal domain*, giving rise in some cases to unusually long APs. Such AP phrasings provide an important prosodic cue for the identification of the syntactic right edge of such domains.

Our data come from multiple sources. Most of them come from our own fieldwork conducted during the period 2016–2021 with various native-speaker consultants; in some cases, we ran questionnaires with over a dozen native speakers. All were Spanish/Guarani bilingual speakers who acquired Guarani at a young age and still speak it in their daily lives. There were two main consultants, with whom we have worked on all aspects of the data reported here, and were also our main participants in our prosody study. One is a male in his twenties and the other a female in her fifties.⁵ We used the standard elicitation methods, namely, grammaticality judgement questionnaires and contextualized Spanish translations and implicatures to elicit meaning. For the prosody study, we recorded randomized sentences with Audacity and analyzed the recordings with the Praat software. Our investigation has also been informed by the rich and insightful description of Paraguayan Guarani by Ayala (1996), and it is the direct source of some of our examples. Another rich

source of examples was the popular oral stories contained in *Mombe'u pyre, Mombe'u pyrã*, compiled and edited by Aguilera Jiménez (Aguilera 2012).⁶

The paper is organized as follows. In Section 2, we present the properties of the VP in PG, which also serves as a brief introduction to aspects of the morpho-syntax of the language. In Section 3, we examine in some detail the subordinate VP introduced by *ha*, in particular the material that can and cannot appear between V and the subordinator *ha*. This investigation leads us to the conclusion that the subordinator *ha* is relatively low in the clausal structure. In Section 4, we present our findings regarding the prosodic parsing of PG, in particular regarding the verbal domain in root clauses and in subordinate complements, and in Section 5, we investigate the implications of such prosodic analysis for the linearization of verbal arguments and other VP constituents.⁷ In Section 6, we provide a brief summary and discuss some implications of the proposed analysis. In the Appendix A, we address the puzzling finding regarding the relatively low position of the subordinator *ha* and put forth the conjecture that it might be due to its genesis.

2. Some Preliminaries on the Morpho-Syntax of the Verbal Domain of Paraguayan Guaraní

As we examine in detail the material in the VP domain (this section), and later the material between V and the subordinator *ha* (next section), we arrive at an analysis in which various bound inflectional morphemes can combine with a VP, giving rise to an interleaving of inflectional (bound) morphemes and free-standing phrasal morphemes. This outcome fits well with the view of inflectional morphology put forth in *Distributed Morphology and the Pieces of Inflection* by Halle and Marantz (1993), in which phrases and what are traditionally analyzed as “morphologically complex words” are generated by the same generative engine, namely the syntactic component. More specifically, the properties of such complex words can be entirely accounted for in terms of their syntactic and phonological properties, bypassing the need to postulate an independent morphological component. Thus, we understand a bound morpheme (BM) to be one that can syntactically combine with either a head or a phrase, but is phonologically integrated as part of an adjacent word (located to its left if the BM is a “suffix” and to its right if the BM is a “prefix”).

We will show that many of the low Adverbs that combine with V in (2b) have typical properties of phrases (not of heads) in that they can undergo movement, and in particular, long-distance leftward movement when they are focused. In other words, they can undergo short- and long-distance focus fronting. Furthermore, we will see that there are functional BMs (Fu in (2b)) that syntactically combine with VP* (namely, with the combinatorial output of V and an adverbial phrase), but phonologically lean on the word to their left, namely, on the adverb itself, thus giving rise to a mismatch between the morpho-syntax and the morpho-phonology.

Importantly, the verbal inflectional morphemes that we will discuss here obey, to a large extent, the *Mirror Principle* put forth by Baker (1988): If inflectional morpheme A precedes inflectional morpheme B, then A is lower than B in the syntactic structure. In other words, it is generally the case that outer inflectional morphemes are syntactically higher than inner inflectional morphemes in a phonologically complex word.

This section is organized as follows. In Section 2.1, we present some general properties of the verbal phrase, which provides some evidence for the initial-headedness of the verbal structure in PG. We also introduce negation, which consists of two discontinuous affixes, a prefix and a suffix. Importantly, we will see that the location of the negative suffix flags the right edge of the small predicate VP* and is therefore an important tool to determine the structural position of the elements that make up the verbal phrase, which we examine in detail in Section 2.2. We will see there that the VP* can contain low adverbs, which we argue are phrasal, as well as numerous BMs. In the negative forms, the negative suffix appears to the right of such morphemes. In Section 2.3, we discuss the morphemes that are located above the VP*; in the negative form, the negative suffix appears to the left of such morphemes. In Section 2.4, we summarize the data and the questions they raise.

2.1. Inflection, Negation, and Questions

We begin by outlining some general properties of the language. PG has a person-based inflectional system, but no inflectional Tense (Tonhauser 2006, 2011; Pancheva and Zubizarreta 2020). This person-based inflectional system is a direct reflex of a direct/inverse agreement system, sensitive to the Person hierarchy, whereby speech participants take precedence over non-speech participants. If the object is higher in the hierarchy than the external argument, then the Object enters into an Agree relation with the Person inflectional category at the left edge of the VP (Payne 1994; Zubizarreta and Pancheva 2017a, 2017b). For illustrative purposes, we give in (4) the direct/inverse paradigm in the singular form.⁸ To be noted is that the inverse paradigm are morphologically identical with the possessor pronouns.

(4) Direct/Inverse agreement. Singular forms.

Person	1	2	3
Direct	a-	re-	o-
Inverse	che	nde/ne	

Whatever the specifics of the mechanics of agreement that one may adopt, it appears clear that the Person (*Per*) feature is realized at the left edge of a category (as a prefix or as a clitic) and it identifies that category as a predicate phrase. This inflectional *Per* marker is present consistently in matrix and subordinate verbal predicates (as well as in predicative PPs, which we do not discuss here). The direct/inverse paradigm is exemplified in (5),⁹ and their (simplified) structures are as in (6) (for details see, Zubizarreta and Pancheva op.cit.)¹⁰ *Per* agrees with the external argument (*D*₁) in (6a) and with the Object (*D*₂) in (6b).

- (5) a. (Nde) *re-mbo-jahu ichupe* (direct order)
(2SG.PRON) 2SG-TR-bathe 3.PRON
'You bathe him/she.'
- b. (Ha'e) *ne-mbo-jahu* (inverse order)
(3.PRON) 2SG-TR-bathe
'(S)he bathes/ed you.'
- (6) a. [[*Per* [*VP** *D*₁ [*VP* *V* *D*₂]]] (direct order structure)
b. [[*Per* [*VP** *D*₁ [*VP* *V* *D*₂]]] (inverse order structure)

Zubizarreta and Pancheva (2017a, 2017b) have argued that the above construction involves a process of Obj promotion, restricted to inalienable constructions (and extended cases). This process places the possessed Obj to the left of the verb, a position where the Poss contained within the Obj is visible to *Per* at the left edge of the verbal phrase. The value of *Per* is defined in terms of the P-hierarchy: If Subj > Poss, then *Per* agrees with the Subj (direct order) (7a). If Poss > S, then *Per* agrees with Poss (inverse order) (7b). In the latter case, *Per* has a dual role: It identifies the Poss argument of the promoted Obj and it identifies the verbal phrase as a predicate. The *Per* inflectional features to the left of the promoted Obj identify the left edge of the small verbal predicate phrase, to which we will refer in this paper as *VP**.

- (7) a. Che *a-po johéi ichupe* (direct order)
1SG.PRON 1SG-hand wash 3.PRON
'I washed his/her hands.'
- b. Ha'e *che=po johéi* (inverse order)
3.PRON 1POSS=hand wash
'(S)he washes my hands.'

The above construction is of central significance in the grammar of present-day PG because it provides a robust syntactic cue for the language learner. While the *Infl-O-V* order is compatible with an all-new-focus information structure, it is restricted to a well-defined set of inalienably possessed objects and verbs. On the other hand, the all-new-information word order *Infl-V-O* is unrestricted. Such left/right asymmetry points to VO as the basic word order, and concomitantly to the initial-headedness of the VP in present-day PG. Such an analysis is reinforced by the fact that a clausal complement, as well as VP complements, always follow their embedding verb; see Section 3.¹¹

Negation in PG consists of a prefix, which marks its logical scope position, and a suffix that flanks the verbal unit on the right, a unit that consistently corresponds to the verbal constituent we have dubbed VP* (see (8a)), a structure compatible with a wide focus interpretation. It can also circumscribe a fronted narrow focused constituent, as in examples (8b–c) (from Ayala 1996, p. 42).¹²

- (8) a. *Nda-pe-ke-i* *péē* *ko'á-pe*
 NEG-2PL-sleep-NEG 2PL.PRON here-LOC
 'You-all do not sleep here.'
- b. *Na-péē-i pe-ke ko'á-pe*
 'It is not you-all who slept here.'
- c. *Nda-ko'á-pe-i péē pe-ke*
 'It is not here that you slept.'

The negative counterparts of (7) are given below. As expected, Neg circumscribes the promoted Obj and the Verb, as they are contained within VP*.

- (9) a. *Che* *nd-a-hova-johéi-ri* *ichupe*
 1SG.PRON NEG-1SG-face-wash-NEG 3.PRON
 'I didn't wash his/her face'
- b. *Ha'e* *na* *nde=rova* *(jo)héi-ri*
 (S)he NEG 2SG.POSS=face wash-NEG
 (S)he didn't wash your face'

The language has negative indefinites (NPIs), which must be licensed by negation at some level of syntactic analysis (10a–b). Importantly, NPIs cannot function as topics when fronted. It is thus revealing that the VO option in (10a) was judged to be the neutral order (no emphasis required) while the OV order in (10b) was judged to require emphasis on the indefinite. (This reported judgement matches the recorded intonation of such cases in our prosody database, where the three preverbal NPI Objects (three renditions of each) were consistently pronounced with a focal accent.) This subtle asymmetry again points to VO as the underlying order in PG. Note that focused/emphatic constituents can precede or follow the topic in the preverbal position, as indicated by the angle brackets in (10b). In addition, focused constituents (like topics) can undergo long-distance fronting (10c). (For more on subordinate structures, see Section 3.)¹³

- (10) a. *Kalo* *nd-o-karú-i* *mba'eve*.
 Kalo NEG-3-eat-NEG anything
 'Kalo didn't eat anything.'
- b. *<Kalo> mba'eve <Kalo> nd-o-karú-i*.
- c. *Mba'eve* *he'i* *Kalo* *nd-o-karú-i_ha*.
 nothing 3.say Kalo NEG-3-eat-NEG_SUB

Note that the negative indefinite form *mba'e-ve* is constituted of the indefinite *mba'e* 'thing' and the bound morpheme *-ve*. On the other hand, when the indefinite combines with the unstressed Q(uestion) marker *-pa* (or *piko*), a wh-phrase is obtained, as illustrated in (11). As pointed out earlier, wh-phrases must appear at the left periphery of the clause.

- (11) a. Mb'aé-pa o-karu Kalo?
 thing-Q 3-eat Kalo
 'What did Kalo eat?'
- b. Mba'é-pa he'i Kalo o-karu_ha?
 thing-Q 3-say Kalo 3-eat_SUB
 'What did (s)he say Kalo ate?'

2.2. The Contents of VP*

In this subsection, we discuss a variety of elements that are found within VP*. It is not intended to be an exhaustive list, but it is illustrative of the kinds of elements that are part of the small predicate phrase VP*. In Section 2.2.1, we discuss the low adverbial modifiers (mentioned earlier) and argue that they are best analyzed as phrases. In Section 2.2.2, we discuss the functional bound morphemes, some of which can intersperse with material within VP* and some of which appear strictly at the edge of VP*. The data, unless noted otherwise, are from our own fieldwork. (For relevant discussions regarding the nature and ordering of some of these morphemes, see also Ayala 1996; Kallfell 2016; Frutos 2016; Estigarribia 2020, a.o).

2.2.1. Low Adverbs

Within the innermost part of the verbal domain VP* we find low phrasal modifiers that specify (a) the quality of the event or state, e.g., *porã* 'well/pretty', *vai* 'bad/ugly' (b) the manner in which the event unfolds; e.g., *mbegue* 'slowly', *py'a* 'fast', and (c) temporal properties of the event, e.g., *meme* 'frequently, habitually', *tapia* 'always', or *ramo* 'recent'. Importantly, in the negative forms, these modifiers must be flanked on their right by the negative suffix; see examples in (12a–c). The example in (12c) further shows that multiple modifiers are possible. As we can see, the position of the negative suffix is a robust indicator of the right edge of the small predicate VP*. The negative suffix in such forms cannot appear in any other position.

- (12) a. (i) O-karu *porã*. (ii) Nd-o-karu *porã-i*
 3-lunch well NEG-3-lunch well-NEG
 '(S)he lunch well' '(S)he did not lunched well.'
- b. (i) O-ñani *mbegue*. (ii) Nd-o-ñani *mbegué-i*.
 3-run slowly NEG-3-run slowly-NEG
 '(S)he ran slowly.' '(S)he did not run slowly.'
- c. (i) O- mba'apo *porã* *meme*
 3-work well frequently
 '(S)he habitually works well.'
- (iii) Nd-o-mba'apo *porã* *meme-i*
 NEG-3-work well frequently-NEG
 '(S)he doesn't habitually work well.'

While quality adverbs like *porã* or *vai* must appear postverbally next to the verb (these are the lowest of the modifiers), the manner and aspectual adverbs may be focused-fronted, showing that they have the mobility of phrasal constituents; see examples in (13aii and 13 bii), with contrastive context spontaneously provided by one of our consultants.¹⁴ This concurs with what we have in our prosody database: 3 renditions of 2 such cases show

consistent focal accent on the preposed Adv. As mentioned earlier and as indicated by the angle brackets, the topic can precede or follow the fronted focused constituent; (cf. 13ai and 13bi). Also, as mentioned earlier, the focused constituent can undergo long distance fronting.¹⁵

- (13) a. i. <Kalo> *meme* <Kalo> o-mba'apo porā.
 <Kalo> *frequently* <Kalo> 3-work well
 'Kalo works well frequently.'
 Ambue-kuéra o-mba'apo porā sapy'apy'a.
 'Others work well sometimes.'
- ii. *Meme* he'i Kalo o-mba'apo porā.
 frequently 3.say Kalo 3-work well
 '(S)he says Kalo frequently works well.'
 Ambue-kuéra o-mba'apo porā sapy'apy'a.
- b. i. <Kalo> *mbegue* <Kalo> o-guata.
 'Kalo walked slowly.'
 Ambue-kuéra o-guata py'a.
 'Others walked fast.'
- ii. *Mbegue* he'i Kalo o-guata.
 slowly 3.say Kalo 3-walk
 '(S)he said Kalo walked slowly.'
 Ambue-kuéra o-guata py'a.
 'Others walked fast.'

Some evidence that the negative suffix marks the right edge of the VP* is provided by the paradigm below. The aspectual modifier *jevy* or *jeý* 'again', morphologically related to the verb (*o*)*jevy* 'to return' may, but need not, be flanked on the right by the negative suffix. Interestingly, we have found that there is a difference in scope between the two options. As illustrated by the examples below, if the adverb is flanked by the negative suffix to its right, the adverb is within the scope of negation, and if it is flanked by the negative suffix to its left, it is outside the scope of negation. In (14b), the adverb is part of the VP* and in the scope of negation; it can therefore have the reading in (15b). On the other hand, in (14a), the adverb is outside the VP* and outside the scope of negation; therefore it is incompatible with the reading in (15b)—it can only have the reading in (15a). Thus, the examples clearly show that the two linear orders are associated with distinct structural positions.

- (14) a. Nd-o-karú-i *jeý*
 NEG-3-lunch-NEG again
- b. Nd-o-karu-jeý-i
 NEG-3-lunch-again-NEG
- (15) a. (Again (not lunch)) (lunch-event never took place)
- b. (Not (lunch again)) (lunch-event was not repeated)

There is some indication that the Per(son) features mark the left edge of the verbal predicative phrase VP*. Roots in PG are not specified for category type; this is determined by their syntactic context. Thus, a root that typically functions as a verb can also function as an adverbial modifier, as in (16a–b) (examples are from Velázquez-Castillo 2004). Note the absence of the *Per* marker on the modifier, which shows that the VP* internal modifiers do not function as an independent predicate. The verb and the modifier form a complex

predicative phrase, referred to here as VP*. As expected, the negative suffix must follow such modifiers.

- (16) a. *Nd-o-jogua ñemi-ri*
 NEG-3-buy hide-NEG
 ‘(S)he did not buy hiddenly.’
 b. *Nda-h-asē soro-i*
 NEG-3.cry rip-NEG
 ‘(S)he did not break down crying.’

To recapitulate, we understand the absence of Per(son) features on the left edge of an Adv as indicating that it does not constitute an autonomous predicate. The Verb and L(ow) Adverbs constitute a syntactic unit, as well as a prosodic unit (with one single PA); its right edge is demarcated by the negative suffix. Such a syntactic unit functions as a predicative phrase, to the extent that the property-denoting parts share one and the same Per(son) feature, and are predicated of one and the same subject. We have also seen that this syntactic unit, to which we refer as VP*, may have a recursive structure, with multiple modifiers.

2.2.2. Bound (Functional) Morphemes

Among the BMs that are part of the VP*, we find two types: those that can appear in an inner position and those that can only appear at the rightmost edge of the VP*. Among the first type are desiderative *-se*, totalitative *-pa*, and comparative *-ve*, which can appear between the verb and the L-Adverb or after the L-Adverb. Among the second type are the prospective morpheme *-ta*, the incipient *-pota*, and the habitual *-va*, to which we refer as Low-Aspectual (or L-Asp) morphemes; they can only appear at the rightmost edge of the VP*.

Inner Bound Morphemes

The stressed bound morpheme *-pa*, (morphologically related to the verb *(o)-pa* ‘finished’) specifies that the event was accomplished completely/totally or to the fullest extent. (Since only the marked, non-final stress is orthographically marked in PG, we will indicate the orthographically unmarked stress with bolds, where relevant, as a reminder). As shown in (17), this BM can appear after the verb or after the Adverb. The same is true for desiderative *-se*, as illustrated in (18), as well as for comparative *-ve*, as illustrated in (19) (for some but not all speakers).¹⁶ These morphemes can also be combined, as illustrated in (20).

- | | | | | | |
|------|----|-----|-------------------------------------------------------------------------|------|----------------------------------------------------------------------------------------------|
| (17) | a. | (i) | <i>O-karu-pa</i>
3-eat-TOT
‘(S)he ate all’ | (ii) | <i>Nd-o-karu-pá-i</i>
NEG-3-eat-TOT-NEG
‘(S)he didn’t eat all.’ |
| | b. | (i) | <i>O-karu-pa porã</i> | (ii) | <i>Nd-o-karu-pa porã-i</i> |
| | c. | (i) | <i>O-karu porã-pa</i> | (ii) | <i>Nd-o-karu porã-pá-i</i> |
| (18) | a. | (i) | <i>O-karu-se</i>
3-eat-DES | (ii) | <i>Nd-o-karu-sé-i</i>
NEG-3-eat-DES-NEG |
| | b. | (i) | <i>o-karu-se porã</i>
3-eat-des well
‘(S)he desires to eat well.’ | (ii) | <i>Nd-o-karu-se-porã-i</i>
NEG-3-eat-DES well-NEG
‘(S)he does not desire to eat well.’ |
| | c. | (i) | <i>O-karu porã-se</i> | (ii) | <i>Nd-o-karu porã-sé-i</i> |

- (19) a. (i) O-karu-*ve*
3-eat-more
'(S)he ate more.'
b. (i) O-karu-*ve* porã
3-eat-more well
'(S)he eats more and well.'
c. (ii) O-karu-porã-*ve*
'(S)he eats better.'
- (ii) Nd-o-karu-*vé-i*
NEG-3-eat-more-NEG
'(S)he ate more.'
(ii) Nd-o-karu-*ve* porã-**i**
NEG-3-eat-more well-NEG
'(S)he does not eat more and well.'
(iii) Nd-o-karu porã-*vé-i*
'(S)he does not eat better.'
- (20) a. (i) O-karu-*pa* porã-*se*
'(S)he desires to eat all well.'
b. (i) O-karu-*se* porã-**ve**.
'(S)he desires to eat better.'
- (ii) O-karu porã-*mba-se*.
(ii) O-karu porã-*se-ve*.

Bound Morphemes at the Edge of VP*

At the rightmost edge of the VP* we find the aspectual morphemes: Prosp(ective) *-ta* (21), Inc(ipient) *-pota* (22), and Hab(itual) *-va* (23). Incipient *-pota* is stressed, but not habitual *-va* or prospective *-ta*. As the negative forms show, these morphemes are also flanked on their right by the negative suffix. Interestingly, the negative form of *-ta* is constructed with the stressed frustrative morpheme *mo'ã*, followed by the negative suffix. Although we often translate Prosp *-ta* with the English future modal 'will' (*he will eat*), a closer translation might actually be the English 'going to' (*he is going to eat*) / Spanish 'ir a' (*va a comer*). The L-Asp morphemes have the property of marking the event irrealis or habitual.¹⁷

- (21) a. O-karú-*ta*
3-eat-PROSP
'(S)he will eat.'
- b. Nd-o-karu-*mo'ã-i*
NEG-3-eat-PROSP-NEG
'(S)he will not eat.'
- (22) a. O-ky-*pota*
3-rain-INC
'It is about to rain.'
- b. Nd-o-ky-*potá-i*
NEG-3-rain-INC-NEG
'It is not about to rain.'
- (23) a. A-há-*va* tupaó-pe
1SG-go-HAB church-LOC
'I usually go to church.'
- b. Nd-a-há-*va-i* tupaó-pe
NEG-1SG-go-HAB-NEG church-LOC
'I don't usually go to church.'

L-Asp suffixes can combine with a complex VP*. For example, in (24a), we see the combination of a predicative VP* formed by a verb and a low qualitative/manner adverb, followed by the Prospective Aspect *-ta* (and by *-mo'ã* in the negative counterpart). The negative suffix therefore right-flanks the L-Asp suffix. These examples illustrate the scenario where the morpho-syntax and the morpho-phonology are not aligned: syntactically the Prosp Asp morpheme combines with the verbal phrase formed by V+Adv, but phonologically, it is part of the word *porã* in (24a) and *mbegue* in (24b).

- (24) a. (i) O-karu-porā-ta
3-lunch-well-PROSP
'(S)he is going to lunch well.'
- (ii) Nd-o-karu-porā-mo'ā-i
neg-3-eat-well-prosp-neg
'(S)he is not going lunch well.'
- b. (i) O-guata-mbegué-va
3-walk-slow-PROSP-HAB
'(S)he usually walks slowly.'
- (ii) Nd-o-guata-mbegué-va-i
neg-3-walk-slow-prosp-hab-neg
'(S)he usually does not walk slowly.'

In (25), we see a more complex case, where the VP* predicate is constituted by the main verb merged recursively with the bound morphemes *-pa* and *-se*. The output is in turn merged with the aspectual freestanding adverbial *jevy* or *je'y* 'again', forming a bigger VP* predicate. This output is then merged with the Prospective Aspect suffix *-ta* (or its negative counterpart *-mo'ā*). We thus obtain as final output a verbal phrase that constitutes one long prosodic accentual phrase with multiple stresses, but with one single PA (more on this in Section 4).

- (25) (i) O-mombe'u-pa-se-jevy-ta (ii) Nd-o-mombe'u-pa-se-jevy-mo'ā-i
3-tell-TOT-DES-again-PROSP NEG-3-tell-TOT-DES-again-PROSP-NEG
'(S)he wants to tell all again.' '(S)he does not want to tell all again.'

2.3. Functional Morphemes above VP*

In this section, we discuss the functional morphemes that are above the VP* and above Neg in the negative forms, with the negative suffix thus appearing to their left. In this category, we find the aspectual morpheme *-ma*, which also has focalizing properties (Section 2.3.1) and a variety of modals (Section 2.3.2).

2.3.1. Focalizing Aspect (or f-Asp) *-ma*

We refer to the BM *-ma* as a focalizing Aspect (or fASP) because, although we do not yet have a full understanding of its semantics, it clearly has a focalizing function.

In the unmarked case, *-ma* combines with the predicate VP*. When it merges with the VP*, the morpheme *-ma* focuses on an edge of the temporal contour of the event. When the event is anchored at speech time, *-ma* focuses on the beginning point of the event, giving rise to an imminent incipient reading, as in (26i) (e.g., in a scenario where someone is in the process of sitting down at table to have lunch) and in (27i) (e.g., in a context where someone is preparing to leave). If the event is located prior to the speech time, *-ma* focuses on the endpoint of the event, giving rise to a completed meaning, as in (26ii) and (27ii). The example in (28) illustrates a case of the morpheme *-ma* in combination with a VP* that contains the Prospective Aspectual marker, which can have an incipient futurate reading or a future-in-the-past meaning. The example in (29) illustrates a combination of the morpheme *-ma* with a VP* that contains a low adverb. Although we are concerned here only with the unmarked position of *-ma*, it is to be noted that this morpheme has a variable distribution: It can also attach to other focused constituents of the clause¹⁸; see also Estigarribia (op.cit).

- (26) O-karú-*ma*
3-lunch-fASP
(i) '(S)he is about to have lunch.'
(ii) '(S)he already had lunch.'
- (27) O-hó-*ma*
3-go-fASP
(i) '(S)he is about to have lunch.'
(ii) '(S)he already left'left.
- (28) O-karú-ta-*ma*
3-lunch-PROSP-fASP
'(S)he is/was already going to have lunch.'
- (29) ... la i-lómo h.aku-pa porã-*ma*
DEF.DET 3.POS-back 3.warm-TOT well-fASP
'His back was already all warmed up.'
(from our Mombe'u Corpus)

In the negated counterparts to (26) and (27), the morpheme *-ma* follows the negative suffix; see (30). This indicates that fAsp is higher than VP* and NegP.¹⁹

- (30) a. Nd-o-karú-i *ma*
NEG-3-eat-NEG-fASP
'(S)he is not going to have lunch (contrary to plans).'
(incipient futurate event)
'(S)he did not have lunch (contrary to plans).'
(future-in-the past event)
- b. Nd-o-hó-i-*ma*
NEG-3-go-NEG-fASP
'(S)he is not going to leave (contrary to plans).'
(incipient futurate event)
'(S)he did not leave (contrary to plans).'
(future-in-the past event)

2.3.2. Modals

There are several functional morphemes that encode modality in PG. Among them is the weak epistemic bound morpheme *-ne* (the described event applies to some but not all worlds).²⁰ When the modal *-ne* combines with negation, the negative suffix is augmented, as illustrated in (31b), which we consider to be a purely morphological property. Importantly, the modal follows the negative suffix, showing that, like fAsp *-ma*, the modal *-ne* is above the VP* and NegP.

- (31) a. O-ký-*ne* b. Nd-o-ky-i-ché.*ne*
3-rain-MOD NEG-3-rain-NEG-MOD
'It might rain.' 'It might not rain.'

The modal *va'erã* can have an epistemic/circumstantial meaning or a deontic meaning. In negative forms *va'erã* can appear before or after the negative suffix, suggesting that it has a variable position. When it follows negation (which means that it is above the VP*), the epistemic and circumstantial meanings are favored (32a–b). On the other hand, when it

precedes the negative suffix (which means that it is contained within the VP*), the deontic reading appears to be the only one available (32c).

- | | | | | | |
|------|----|-------------------------------------------------------------------|----------|--------------|----------|
| (32) | a. | Nda-che-rasẽ-i | va'erã | re-hó-rõ | jepe |
| | | NEG-1SG-cry-NEG | MODAL | 2SG-go-COND | even |
| | | 'I probably wouldn't cry if you go.' (epistemic) | | | |
| | b. | Nda-o-ký-i va'erã | o-sẽ | haguã | o-guata |
| | | NEG-3-rain-NEG MODAL | 3-go.out | SUB.IRREALIS | 3-walk |
| | | 'It mustn't rain to be able to go for a walk.' (circumstantial) | | | |
| | c. | Nda-che-rasẽ va'erã-i | che | sy | rovake |
| | | NEG-1SG-cry-NEG MODAL | 1SG.POSS | mother | in.front |
| | | 'I shouldn't cry in front of my mother.' (it is a rule) (deontic) | | | |

When a modal is combined with fAsp *-ma*, the modal follows it, as illustrated by the examples below. This indicates that the modals are higher in the syntactic structure than fAsp. As we will see later, *va'erã* appears to have variable prosodic properties.

- | | | | | |
|------|----|---------------------------------|----|--------------------------------|
| (33) | a. | O-ký-ma-ne | b. | O-ký-ma va'erã |
| | | 3-rain-fASP-MOD | | 3-rain-fASP MODAL |
| | | 'It might have already rained.' | | 'It must have already rained.' |
| | | 'It might be about to rain.' | | 'It must be about to rain.' |

The epistemic modal *vaicha*, with a meaning akin to 'seem/appear,' deserves to be mentioned as well. It has a similar distribution to epistemic *va'erã*, and it has similar prosodic properties.

- | | | | | | |
|------|----|-----------------------------|----|-------------------------------------|--------|
| (34) | a. | O-ky vaicha. | b. | Nd-o-ký-i | vaicha |
| | | 3-rain MODAL | | NEG-3-rain-NEG | MODAL |
| | | 'It appears to be raining.' | | 'It does not appear to be raining.' | |

2.4. High Grammatical Aspect and Evidentials

Although high/grammatical aspects and evidentials are not part of the current study, we mention them for sake of completeness, and also because their distribution in subordinate clauses is revealing of the structural status of the subordinator *-ha* (see Section 3).

The language has grammatical, high-level, aspectual morphemes, which also appear to carry modal force, namely, the retrospective aspectual morpheme *kuri* and its distal counterpart *va'ekue* (Pancheva and Zubizarreta 2019, 2020, and references cited therein).²¹ These morphemes are mobile and often deaccented. Although they left-adjoin to the verbal phrase in the unmarked case, they may also left-adjoin to other clause-level focused constituents. The high aspect *hína*, when combined with a verbal phrase, gives rise to a continuative event meaning.²² As first noticed by Kallfell (2016), this morpheme also contributes a 'certainty' meaning, and when it combines with other clause-level phrases, it appears to lose its temporal contribution and only retains its focalizing function and modal force. Many such examples were found in our Mombe'u Corpus; see also Estigarribia (2020). Similarly, the indirect evidential *ra'e* and reportative *raka'e* have temporal import and focusing properties. Like some of the morphemes discussed earlier, they have a variable distribution; they can adjoin to clause-level constituents (such as an XP argument) when these are focused (see Pancheva and Zubizarreta 2019). Thus, all of the above morphemes are mobile in nature and appear to have multiple functions.

2.5. Summary

Based on the discussion in this section, we have arrived roughly at a verbal structure schema like the one below. As we saw in Section 2.1, a ‘promoted object’ is also contained within the VP*, to the left of V, but since we are focusing here on what appears to the right of V, we omit it in the schema below. In (35a) we give the schema for the complex VP* made up of a V and one or more Adv. The inner morphemes include the desiderative *-se*, totalitative *-pa*, and comparative degree *-ve*. These can appear after V or after the Adv. The edgemost morphemes include L-Asp *-ta*, *-pota*, and *-va*, as well as deontic *va'erã* (optionally). The schema in (35b) includes the VP* given in (35a), as well as the morphemes that are located above the VP* and above Neg. These include fAsp *-ma* and the modals *-ne*, *va'erã*, and *vaicha*.

- (35) a. [Neg [[VP* V (inner morphemes) AdvP (inner morphemes)] (edge morphemes)]-i]
 b. [[[Neg [VP*] -i] (fAsp)] (Mod)]

To recapitulate, the distribution of the negative suffix is not arbitrary: It demarcates the right edge of the VP*. The distribution of the Neg suffix provides a robust cue for the constituency of the material contained within the VP*. Importantly, as we will see later, the VP* (along with its associated functional categories) typically constitute one single AP.

The next imminent question is the following: Where are the post-verbal, informationally neutral, non-topical arguments located in the syntactic structure? The predicate in simple clauses does not appear to provide a robust answer to this question. On the other hand, the verbal predicate of subordinate clauses introduced by the subordinator *ha* can provide us with some insights.

3. A Closer Look at the Verbal Structure of Subordinate Complements

We turn now to the VP in subordinate clauses, in particular the material that can appear between V and *ha*.²³ Interestingly, it basically amounts to the same material identified earlier as part of the VP* in the previous section. We illustrate this below. In each pair, example (b) is the negative counterpart to (a). The distribution of the negative suffix is exactly as described for the matrix clause in Section 2. Although I use the verb *he'i* (‘to say’) in most examples for the sake of consistency, any attitude verb can function as the embedding verb. A brief note about the subordinator *ha*: It is always stressed and in the unmarked case, it consistently forms part of an AP with the material contained within the preceding VP. Yet, the subordinator *ha* is not an ordinary bound morpheme because it can carry emphatic accent, and when it does, it constitutes an independent AP, with semantic consequences.²⁴ To distinguish it from the functional bound morphemes discussed earlier, we will refer to the subordinator *ha* as a Particle (rather than as a suffix), and we will mark it as such by preceding it with an underline.

- (36) a. He'i *o-mombe'u-pa-jey-ta_ha*.
 3.say 3-see-TOT-again-PROSP_SUB
 ‘(S)he says (s)he is going to tell all again.’
 b. He'i *nd-o-mombe'u-pa-jey-mo'ã-i_ha*.
 (37) a. He'i *mitã-nguéra o-je-po-hei-porã-ta_ha*
 3.say child-PL 3-REFL-hand-wash-well-PROSP_SUB
 ‘(S)he says the children are going to wash their hands well.’
 b. He'i *mitã-nguera nd-o-je-po-hei-porã-mo'ã-i_ha*
 (38) a. He'i *mitã-nguera o-ñe-mboja-mbegue-mbota_ha*
 3.say child-PL 3-REFL-get.close-slowly-INC_SUB
 ‘(S)he says the children are about to slowly get close.’
 b. He'i *mitã-nguera nd-o-ñe-mboja-mbegue-mbota-i_ha*

The other functional categories that may appear between V and the subordinator *ha* are the associated verbal functional morphemes, i.e., such as fAsp *-ma* and the epistemic modal *-ne* (39a–b), as well as the epistemic/circumstantial *va'erā* (40a–b), deontic *va'erā* (40c), and *vaicha* (not illustrated here). Cf. (32a–c).

- (39) a. He'i mitā-nguera o-karu-ma-ne_ha
3.say child-PL 3-REFL-eat-fASP-MOD_SUB
'(S)he says the children might have already eaten.'
- b. He'i mitā-nguera nd-o-karu-i-ma-ne_ha
- (40) a. Ha'e nda-che-rasē-i va'erā_ha re-hó-rō jepe.
1SG.say NEG-3-cry-NEG MODAL__SUB 2SG-go-COND even
'I said that I probably wouldn't cry if you go.' (epistemic)
- b. He'i nd-o-ký-i va'erā_ha o-sē haguã o-guata.
3.say NEG-3-rain-NEG 3-go.out SUB.IRREALIS 3-walk
MODAL_SUB
'(S)he says it mustn't rain to be able to go for a walk.' (circumstantial)
- c. He'i nda-che-rasē va'erā-i_ha che sy rovake.
3.say NEG-1SG-cry-NEG 1SG.POSS mother in.front
MODAL-NEG_SUB
'(S)he says I shouldn't cry in front of my mother.' (it is a rule) (deontic)

To recapitulate, the above data show that the verbal constituent with which the subordinator *ha* merges is bigger than a head; it is minimally the VP*, and it can also incorporate the functional layers above the VP*.²⁵

We turn next to what *cannot* appear between V and the subordinator *ha*. These include high (grammatical) aspectual morphemes, such as *kuri*, continuative *hína*, and the indirect evidential *ra'e* and reportative *raka'e* (mentioned at the end of Section 2.5); e.g., (41). The natural position of such morphemes is after *ha*.²⁶ We could attribute this to the fact that these clausal morphemes are higher in the syntactic structure than the subordinator *ha*.

- (41) *Maria o-mombe'u cheve Kalo o-va <*kuri/*hína/*ra'e> ha
 Maria 3-tell 1SG.IO Kalo 3-move </kuri/hína/ra'e> SUB
 <kuri/hína /ra'e>
 'Maria told me that Kalo moved /had moved/ is moving / it turns out.'

A more puzzling fact is that among the excluded material, we find the XP arguments, and temporal and locational modifiers (e.g., *ko'erō* 'tomorrow', *asaje* 'siesta', *ka'aru* 'afternoon', *ko'ape* 'here'), which are VP modifiers. These appear after the subordinator *ha*. Before we address this issue, we will discuss the prosodic properties of the subordinator *ha*, which we think is fundamental to the understanding of the linearization of arguments in embedded complement clauses in PG.

4. The Prosodic Requirement of the Subordinator *ha*

This section is based on work in collaboration with Sun-Ah Jun (Jun, Sun-Ah, and Maria Luisa Zubizarreta Forthcoming), which provides a detailed description of the prosodic phrasing in PG.

4.1. Some Preliminaries

The Accentual Phrase. Languages as diverse as Tokyo Japanese, Korean, Bengali, and French have been characterized as AP languages (Beckman and Pierrehumbert 1986; Jun 1998, 2014; Jun and Fougeron 2000, 2002). Typically, an AP is slightly larger than a word;

it is identified by its tune and may contain one single PA. In a preliminary study of the intonational phonology of PG within the Autosegmental–metrical framework (Pierrehumbert 1980; Beckman and Pierrehumbert 1986), we found that the basic prosodic unit in this language is also the AP, although in this language an AP has the typologically unusual property that it can contain more than one stressed word.

The rhythmic phonological pattern that characterizes the AP domain has contextually determined variations. Thus, the underlying tonal pattern of Japanese has been described as /LH- H*+L L% /. That is, an AP begins with a rising tone (LH-) over the AP-initial two moras, followed by a lexical pitch accent falling tone (H*+L) and an AP-final boundary tone, L%. (In other languages that have an Accentual Phrase, an AP final boundary tone has been labeled as ‘La’ in order to distinguish it from the Intonational Phrase-final boundary tone). However, the surface realization of Japanese AP is not fixed. The tonal pattern changes depending on the location of the lexical pitch accent. The AP tonal pattern is [H*+L L%] if the lexical pitch accent is on the first mora of an AP, whereas the AP tonal patterns is [L H*+L L%] if the lexical pitch accent is on the second mora of the AP. Furthermore, if the AP includes no lexical accent, the tonal pattern is [L H L%]. (See Pierrehumbert and Beckman 1986, 1988; Maekawa et al. 2002; Venditti 2005)

An AP having various surface tonal patterns can be found in other languages as well. The underlying tonal pattern of Korean AP is /L H L Ha/ and that of French AP is /L H L H*a/ (French has a phrasal, and not a lexically determined, pitch accent), but the surface realization varies with the length of the AP and the prosodic/tonal context. For example, when an AP is short, the most common tonal pattern of the AP is [L Ha] in Korean and [L H*] in French. When an AP is at the end of an IP ending with an L% boundary tone, the tonal pattern of the AP is [L L%] in Korean and [L L* L%] in French. (Note that Korean does not have a pitch accent inside an AP because Korean does not have stress). See Jun (1998) on the Korean AP and Jun and Fougeron (2002) on the French AP.

In PG, the AP underlying melody can be defined as a tri-tonal pitch accent HLH*, with its edges marked by an H tone when the AP is four syllables or longer, and stress is not final.²⁷ The H* of the HLH* pitch accent is realized in two ways depending on the prosodic/tonal context. H* is realized as L* when it is just before L% (the Low IP-final boundary tone), and H* is realized as !H* (down step High) when the AP is IP-medial or when the AP is not focused or not immediately before a focused AP. Otherwise, H* is realized as H*. That is, *L* and !H* are allo-tones of the underlying H**. When a monosyllabic word forms one AP, or when an AP begins with a stressed syllable (rare in the language), the first H of the tri-tonal pitch-accent HLH* is often deleted (due to tone crowding). The surface tones are not random, but predictable based on their prosodic and tonal context. PG has an Intonational Phrase (IP), which can include one or more APs. It is the largest prosodic unit defined by intonation, and its final syllable is marked by a boundary tone. The final Intonational Phrase tone can be an L% tone, which marks the end of a declarative sentence, or it can be an H% tone, a continuation rise that indicates that more information is forthcoming. To summarize, the tonal pattern of the AP in PG can be defined as /H HLH*Ha/. However, the surface realization of AP tones differs depending on the length of the AP and the location/tonal context of the pitch accented syllable. In work (to appear), we illustrate and discuss each one of these patterns.

For our present purposes, the central property of the Accentual Phrase in PG that we need to retain is that it may contain more than one word and thus more than one stressed syllable, with a single pitch accent on the last stressed syllable. Although in Korean the AP is typically two to five syllables long (Jun 1998),²⁸ the AP in PG can be quite long. In particular, in cases where the VP* contains a Verb and an Adverb, plus one or more functional morphemes (Section 2.2), we get an AP with two stresses and PA on the final one. When such a VP* is combined with the stressed subordinator *ha* in embedded clauses, an even longer AP is obtained, with three stressed syllables and PA on the final *ha*. Such APs can be eight to nine syllables long, and even 10 to 11 syllables long, as illustrated by the embedded predicate in (36b); see the f0 track in Figure 1 below. This property of

the pitch-accented subordinator *ha* is quite remarkable. We submit that it constitutes its signature property. Not only does it identify *ha* as a subordinator, distinguishing it from the homophonous coordinator *ha* (see the Appendix A), but it also prosodically demarcates the right edge of the verbal domain in a subordinate clause.²⁹

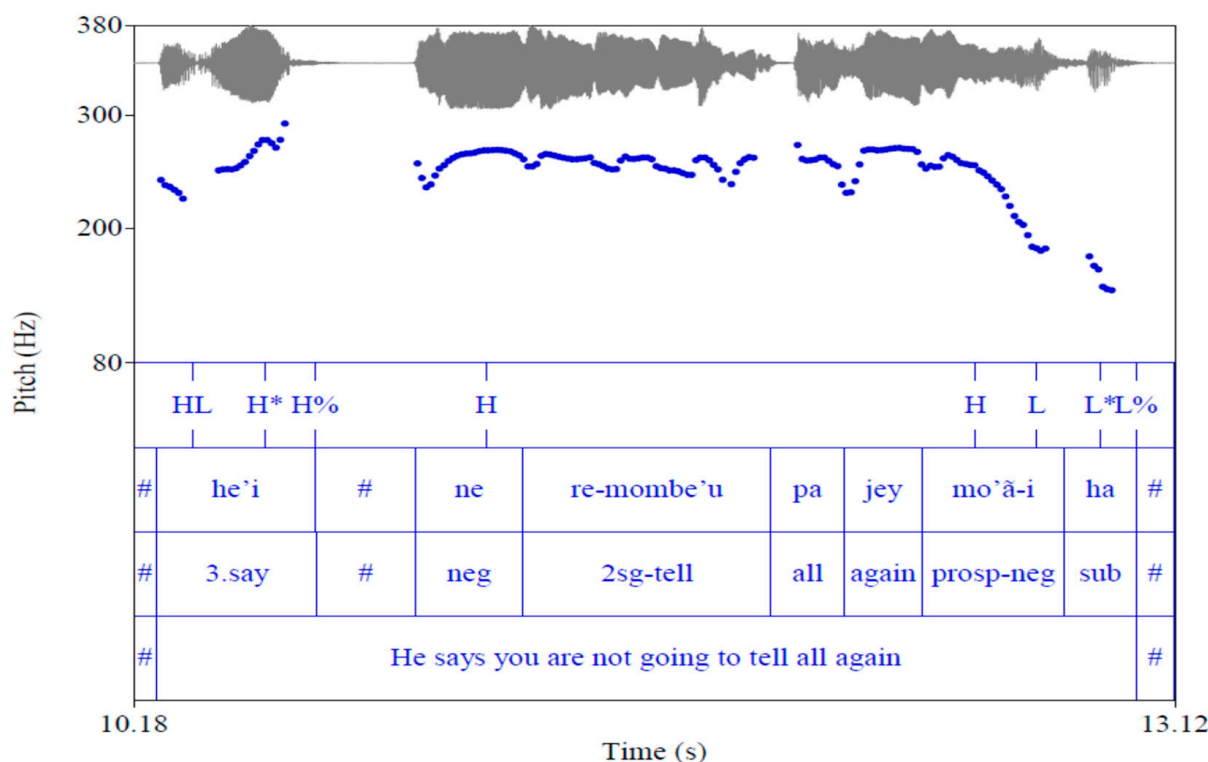


Figure 1. He'i neremombe'upa jey mo'āi ha.

4.2. The Prosodic Closeness Requirement of the Subordinator *ha*

To recapitulate, in prosodically neutral conditions (with no emphatic accents), the subordinator *ha* typically forms an AP with the verbal material to its left, namely, with the VP* and any of the verb's unaccented functional morphemes located between it and the VP*. Yet, length may play a role in the prosodic parsing of the verbal predicate. Thus, relatively short forms, such as *o-ho_ha*, *o-ho-ta_ha*, and *o-ho-ne_ha*, typically map onto one single AP. On the other hand, in long forms (approx. six syllables or more), we find considerable variability.³⁰ As we pointed out above, there are cases in which a VP* gives rise to an AP of eight to nine syllables (not uncommon), and in certain cases, it can give rise to an AP of 10 to 11 syllables, a typologically rare property.

In long forms, a functional unstressed morpheme to the right of the VP*, which typically leans prosodically on the verbal unit to its left, can sometimes lean prosodically on the subordinator *ha* on its right, giving rise to two APs and thus creating a better rhythmic synchrony. To exemplify, we provide the following two renditions (very similar content-wise) by the same speaker. In (42a) the entire subordinate verbal predicate forms one single AP; see Figure 2 below. On the other hand, in (42b) there is a partitioning into two APs, with the unstressed functional morphemes forming one AP with the subordinator to its right; see Figure 3 below.

- (42) a. (Luisa) (he'i) (o-mañā-porā-ma_ha) (i-membý-re).
 Luisa 3.say 3-watch-well-PROSP-fASP_SUB 3.POSS-OBL
 'Luisa said that she has already watched her child well.'
- b. (Luisa) (he'i) (o-mañā-porā) (-ma-ne_ha) (i-membý-re).
 Luisa 3.say 3-watch-well -fASP-MODAL_SUB 3.POSS-OBL
 'Luisa said that she might have already watched her child well.'

Recall that the defining characteristic of a PG Accentual Phrase is that one AP has one tri-tonal pitch accent, HLH*, which is realized in the area of the final stressed syllable as a 'falling-rising' pattern. More specifically, in the F0 contour, the pitch accent is realized as a dip just before the stressed syllable carrying the H* pitch accent. Thus, in Figure 2, if we inspect the alignment of the wave form with the F0 track, we can tell that *o-mañā-porā-ma-ha* forms one AP. Here, the F0 stays the same over [*porā*] and dips on [*ma*] before it rises to H* on [*ha*], which is the accented syllable. On the other hand, in *o-mañā-porā-ma-ne-ha* in Figure 3, we can tell that there are two APs due to the presence of a dip preceding each of the two syllables. The first AP (*o-mañā-porā*) starts with an H tone and dips on [*po*] and rises on [*rā*], a stressed syllable, suggesting the presence of a pitch accent. Then, the second AP starts, showing a high F0 on [*ma*] and an F0 dip on [*ne*], and reaching an H tone on [*ha*], a stressed syllable, suggesting the presence of a second pitch accent. To recapitulate, the F0 tracks clearly show that [*o-mañā-porā-ma-ha*] forms one AP in Figure 2, whereas [*o-mañā-porā-ma-ne-ha*] forms two APs in Figure 3, with the AP-phrasing as (*o-mañā-porā*) (*ma-ne-ha*).

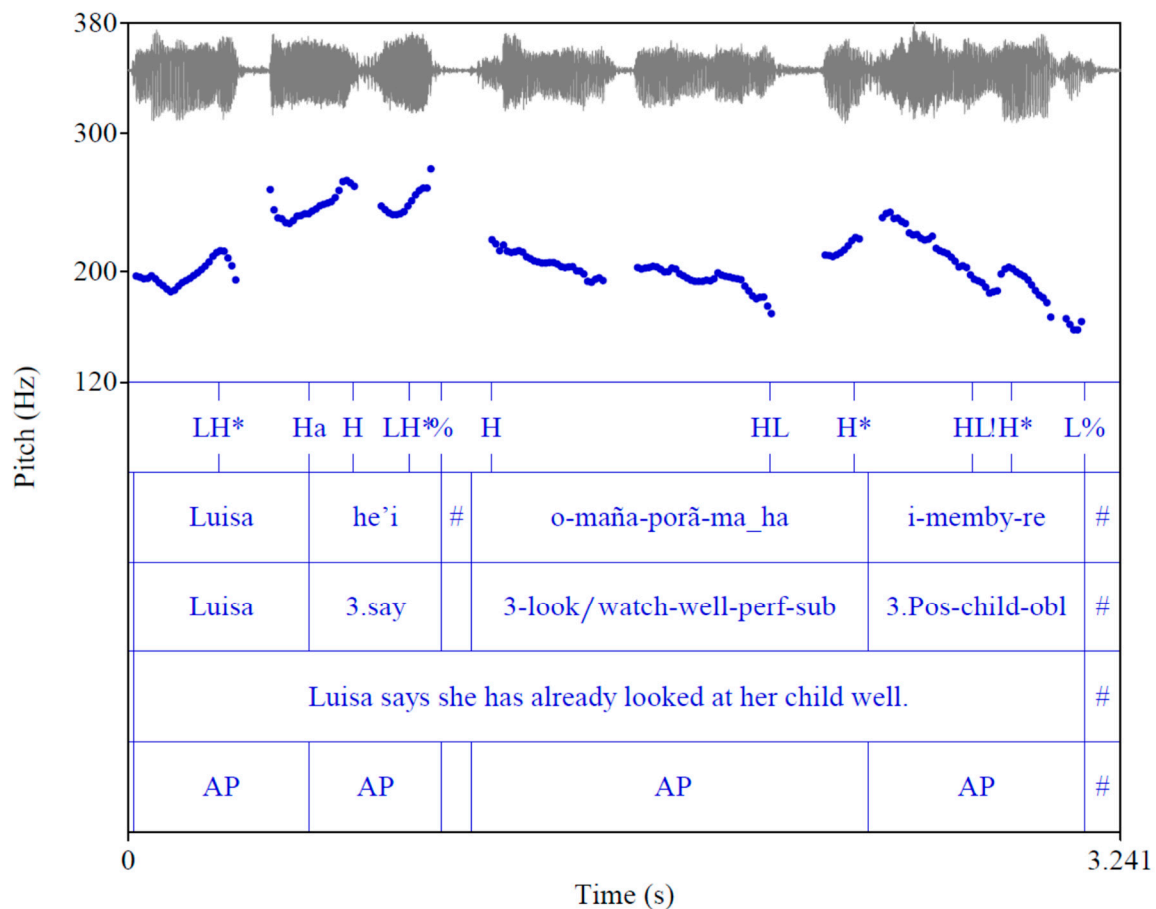


Figure 2. Luisa he'i omañāporāma imembýre.

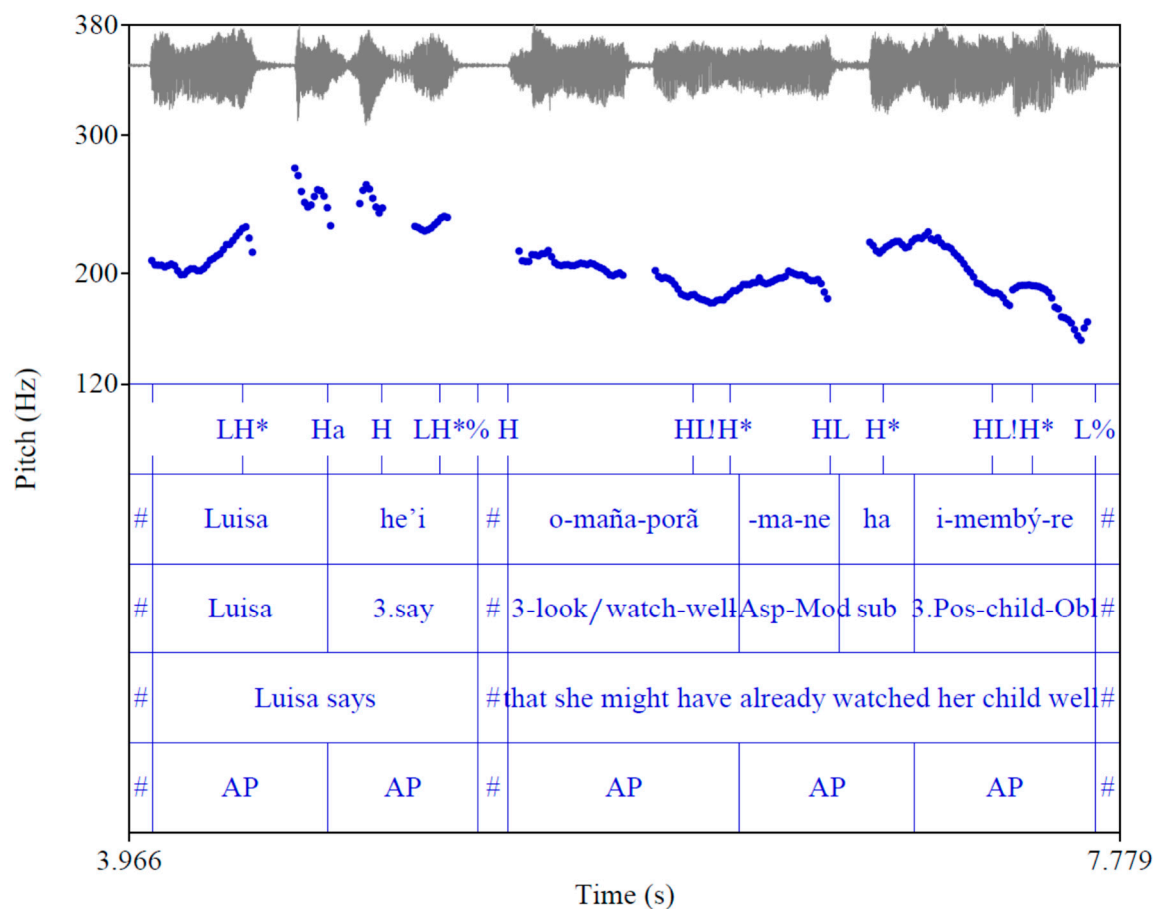


Figure 3. Luisa omañaporãmaneha imembýre.

The modal *va'erã* exhibits variable (and many times ambiguous) prosody. Although in simple clauses *va'erã* is often accented (e.g., (43a)), we have found clear cases of a deaccented *va'erã* in subordinate clauses, with the modal forming one AP with the verb and the subordinator (e.g., (43b)). Another nice minimal pair was obtained in negative sentences, with an accented *va'erã* as one AP in a root clause (44a) and with a deaccented *va'erã* forming one AP together with the subordinator *ha* (44b). See Figures 4 and 5 below.

- (43) a. (O-ho) (va'erã) (mercádo-pe)
 3-go MODAL market-LOC
 '(S)he must go to the market.'
- b. (He'i) (o-ho va'erã_ha)
 3.say 3-go MODAL_SUB
 '(S)he said (s)he must go to the market.'
- (44) a. (Nd-o-ký-i) (va'erã) (o-sẽ_haguã)
 NEG-3-rain-NEG MOD 3-go.out_SUB.IRREAL
 'It must not rain to go.out walking.'
- b. (María) (he'i) (nd-o-ký-i) (va'erã_ha) (o-sẽ haguã)
 'María says that it must not rain to go walking.'

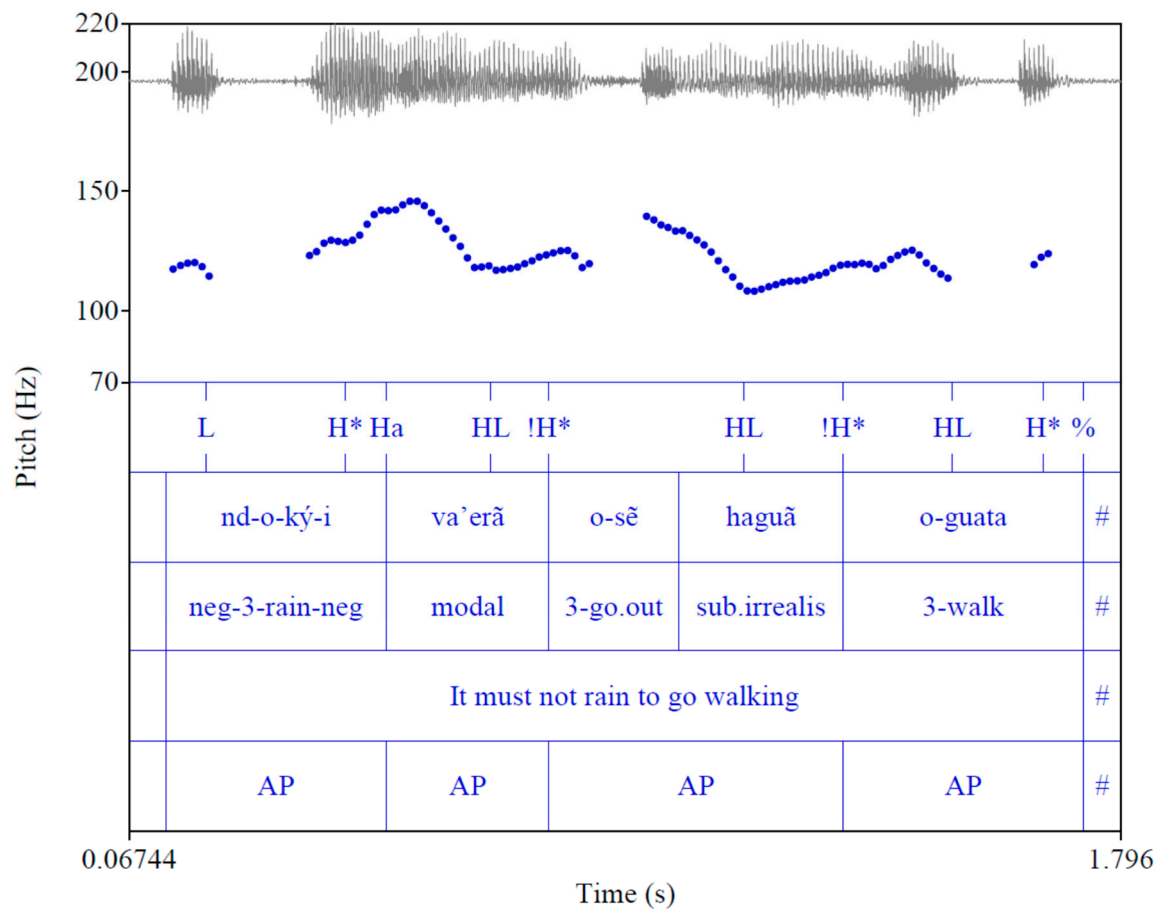


Figure 4. Ndokýi va'erã osẽ haguã uguata.

To recapitulate, the subordinator *ha* is lexically specified for the prosodic requirement in (45a). Yet, given the variability discussed above, the notion of *prosodic closeness* as defined in (45bi), where the prosodic phrasing perfectly matches the syntax, must be complemented with a more lax one in (45bii), as an option for long forms where the perfect syntax/prosody alignment is overridden by rhythmic considerations. Given that rhythmic considerations can affect the prosodic parsing, it is appropriate to assume that the PCR applies at the phonological level.

(45) *Prosodic Closeness Requirement (PCR).*

- a. The subordinator *ha* must be prosodically close to the VP* on its left.
Prosodic closeness is satisfied if all the material contained within the VP*
 - (i) forms one AP with the subordinator *ha* (core cases) or
 - (ii) forms an AP that is adjacent to the AP headed by the subordinator *ha* (rhythmic synchrony cases).
- b.

A plausible view is that (45bi) above applies to all cases at an 'early' phase of prosodic parsing of the syntactic form, but when there are rhythmic synchrony considerations (due to length), a 'late' algorithm may split the initial AP into two APs based on syllable length. The problem with such a view is that we would still want the 'late' algorithm to be sensitive to syntactic structuring (and not just to AP length) because we never get cases in which the Low Adverb is parsed together with the subordinator *ha* as one AP, regardless of length considerations. Only the verb's functional morphemes appear to phrase together with the subordinator *ha* as an independent AP.

5. The Effects of the Prosodic Closeness Requirement on Linearization

5.1. Constraints on Linear Order

We now turn our attention to the material that cannot appear between V and the subordinator *ha*. A notable syntactic property of the subordinate clause under discussion is that no XP argument, neither temporal nor locational modifiers (such as *ko'erō* 'tomorrow', *asaje* 'siesta', *ka'aru* 'afternoon', or *ko'ape* 'here') may appear in such a position. These must appear after *ha*, with the order among them as flexible as in simple clauses.³¹

We exemplify this in (47)–(48); the angled brackets indicate complementary positions for each of the XPs. In each pair, example (a) illustrates a simple root clause and example (b) shows the same sentence embedded under a verb of belief (*oi-mo'ā*) or a verb of saying *he'i* ('say'). The same paradigms can be constructed with any other attitude-embedding verb.³²

- (47) a. O-hasa <peteĩ karai> o-ho-vo <peteĩ karai>
 3-pass <one man> 3-go-SIMULT <one man>
 upé-rupi <peteĩ karai>
 there-around <one man>
 'A man is passing there.'
- b. Oi-mo'ā o-hasa <*peteĩ karai> <*o-ho-vo> <*upé-rupi>_ha
 <peteĩ karai> o-ho-vo <peteĩ karai> upé-rupi <peteĩ karai>
 'I believe a man is passing there.'
- (48) a. O-karú-ta <asajepyte> <Kalo> <asajepyte> kumanda
 3-lunch-PROSP <noon> <Kalo> <noon> beans
 <asajepyte> <Kalo> <asajepyte>
 <noon> <Kalo> <noon>
 'Kalo is going to have beans for lunch at noon.'
- b. He'i o-karú-ta <*Kalo> <asajepyte> <*kumanda> _ha
 <Kalo> <asajepyte> kumanda <asajepyte>
 <Kalo> <asajepyte>
 '(S)he said that Kalo is going to have beans for lunch at noon.'

Other types of complements also appear to the right of subordinator *-ha*, including VP complements (49a–b) and clausal complements (49c); the latter example is obtained by embedding (49b) under the matrix verb *o-mombe'u* (3-tell).

- (49) a. He'i o-ho_ha o-guahẽ peteĩ yvyra-guý-pe.
 3-say 3-go_SUB 3-arrive one tree-under-LOC
 '(S)he said that (s)he arrived under a tree/tree.'
- b. He'i o-ho_ha o-hecha i-sy-pe.
 3-say 3-go_SUB 3-see 3.POSS-mother-DO
 '(S)he said that (s)he went to see his/her mother.'
- c. O-mombe'u he'i_ha o-ho_ha o-hecha i-sy-pe
 3-tell 3.say_SUB 3-go_SUB 3-see 3.POSS-mother-DO
 '(S)he tells that (s)he said that (s)he went to see his/her mother.'

The above discussion can be summarized by the linear order schema given in (50a) and the structurally organized counterpart in (50b).

- (50) a. ... V <*XP> *ha* <XP>
 b. [[... [VP V <*XP>] *ha*] <XP>]
 XP = an argument of V or a temporal/locative) specifier of V.

As mentioned earlier, we can assume that speaker-oriented adverbs are excluded from appearing within the verbal constituent immediately to the left of the subordinator because they are sentential-level adverbs. On the other hand, it is puzzling that the verbal arguments and the verbal temporal/locative adverbs cannot appear in their canonical position, i.e., within or adjoined to the VP*. Our proposal is that the *Prosodic Closeness Requirement* (or PCR) in (45) accounts for (50).

More specifically, the impossibility for such XPs to appear to the left of the subordinator *ha* is that these XPs constitute their own independent AP. In languages like Spanish and English, which do not have an AP, each content word is typically pitch accented, and a head and its complement are likely to form a prosodic unit, known as the *intermediate phrase*, with the last PA perceived as the strongest (see Beckman and Pierrehumbert 1986; Jun 2005, and references cited therein). In PG, a head and its complement each constitute one AP.³³ This is true in other AP languages as well, whether head final or head initial (Jun 1998, 2014, and references cited therein). Since the PCR requires ‘prosodic closeness’ between the subordinator *ha* and the VP* on its left, any intervening AP between V and *ha* would block the PCR from being fulfilled.

To avoid violation of the PCR, an XP that is merged within the VP* in the subordinate clause must be phonologically linearized to the right of the subordinator *ha*, giving rise to the order schematized in (50) with arguments freely placed in the postverbal position. At this point there are two possible analyses of postverbal XP arguments. One analysis is that such XP arguments are in a dislocated position and are related to a silent pronoun within the VP* (i.e., in the canonical argument position) by a mechanism of anaphora. In fact, given that PG is a pro-drop language, such post-verbal XP arguments can be absent if they are recoverable from the discourse context. This analysis is particularly viable in cases where the right edge of the verbal phrase is separated from the postverbal XP argument by a major intonational boundary. The other analysis is that the XP argument is initially merged in its canonical position within VP* and then undergoes a process of *phonological XP displacement*.

(51) *Phonological XP-Displacement*: Linearize XP arguments to the right of the subordinator *ha*.

It appears that the above analysis must indeed be an option in PG. Recall that the adverb *jeý* in (14), repeated in (52), shows that to be interpreted within the scope of negation, the adverb must be to the left of the negative suffix, i.e. within the VP*. If we extrapolate from these cases to NPIs like those in (53), it must be that these, too, are located within the VP* in the syntax, prior to phonological displacement, and not only in subordinate complement clauses, but also in their root counterparts.

- (52) a. Nd-o-karu jeý-i (neg > jeý)
 NEG-3-eat AGAIN-NEG
 ‘(S)he did not eat repeatedly.’
 b. Nd-o-karú-i jeý (*neg > jeý)
 NEG-3-eat-NEG AGAIN

- (53) a. Nd-o-hecha porã-i avavé-pe
 NEG-3-see well-NEG anybody-DO
 ‘(S)he does not see anybody well.’
- b. He’i nd-o-hecha porã-i_ha avavé-pe.
 3.say NEG-3-see well-NEG_SUB anybody-DO
 ‘(S)he says that (s)he doesn’t see anybody well.’

5.2. Extending the PCR across Clauses

Although in the present work we have discussed the aspectually unmarked subordinator *ha*, there are other derivationally related ones, like *hague* (derived from Sub *ha* + terminative *-kue*) and *haguã*, which functions both as the irrealis subordinator (comparable to the English ‘for’) and the purpose subordinator (equivalent to English ‘in order to’). They all share the same prosodic and linearization constraint as the simple subordinator *ha* (see Figures 4 and 5 in Section 4). Thus, we can assume that the same PCR and phonological-XP displacement mechanism applies to these cases as well.

As we survey a larger class of subordinate clauses, such as temporal adverbials, it appears that the PCR applies beyond the domain of the subordinator *ha* and its derivatives. For example, it applies to the accented temporal conjunction *vove* (possibly derived from the combination of the unstressed *-vo*, indicating temporal simultaneity, and the accented suffix *-ve*), which marks its sister VP as a subordinate event that temporally overlaps with the matrix event (translatable as ‘when/while’). Similarly, the above constraint applies to the accented particle *ramo.guare* (derived from adverb *ramo* plus the accented morpheme *-guare*), which indicates that the subordinate event is in the distal past of the matrix event, as well as to *rire* (derived from a postposition meaning ‘after’), which indicates that the matrix event follows the subordinate event. Although we have not yet done prosodic analyses of these cases, it is clear from current descriptions that these temporal particles are accented, and in some cases, like *rire*, it obligatorily renders the verb to its left accentless (Ayala 1996). This indicates the presence of one single AP with one single pitch accent. In all cases, no XP argument can intervene between the verb and the subordinate temporal conjunction. We illustrate this below with the temporal conjunction *rire*.

- (54) a. O-ho (*mercádo-pe) *rire* (mercádo-pe), ...
 O-go (*market-LOC) TEMP.CONJ (market-LOC)
 ‘After (s)he goes to the market, ...’
- b. O-j-ova-héi-porã (*mitã-nguéra) *rire* mitã-nguéra,
 3-REFL-face-wash-well (*child-PL) TEMP.CONJ child-PL
 che a-vy’a.
 1SG.PRON 1SG-happy
 ‘After the children wash their face well, I am happy.’

As we begin to look further, we see that even in root clauses, verb-associated functional morphemes, such as modals *va’erã* and *vaicha*, which can be accented and form one single AP (see the discussion in Section 5), must be right adjacent to the VP*.

- (55) a. O-ho (*mercado-pe) *va’erã* (mercado-pe). Cf. (54a)
 ‘(S)he must go to the market.’
- b. O-j-ova-hei-porã (*mita-nguéra) *va’erã* (mitã-nguéra). Cf. (54b).
 ‘The children must wash their face well.’

Pending a more detailed study, the conclusion that appears to emerge from the above is that the PCR is a general grammatical constraint of (current) Paraguayan Guaraní. If

that is indeed the case, (45) must be reformulated as in (56). The original formulation of *phonological XP displacement* in (51) also requires reformulation, as in (57).

(56) *Prosodic Closeness Requirement (PCR)*:

- (a) VP* and its associated functional morphemes must be prosodically close.
- (b) Prosodic closeness is satisfied iff all the material within VP*
 - (i) form an AP with its associated functional morphemes (core cases) or
 - (ii) form an AP that is adjacent to the AP constituted by its associated functional morpheme(s) (rhythmic synchrony cases).

(57) *Phonological XP-Displacement*: Linearize XP arguments so as to allow the PCR to be satisfied.

The above constraint/algorithm appears to be driven by the tendency to maximize the prosodic phrasing of the verbal predicate and its associated functional morphemes. In effect, ignoring the special cases of rhythmic synchrony, the following *core tendency* emerges.

(58) Maximize the phrasing of the VP* and its associated functional layers as one Accentual Phrase.

As a consequence, we obtain the following result regarding the prosody/syntax interface in PG:

(59) The prosody provides a robust prosodic cue for the identification of the right edge of the VP* (together with its associated functional morphemes) across sentence types.

6. Conclusions

Although the constraints on the linearization of functional morphemes in a word may be assumed to be a mirror of the syntax (cf. Baker 1988, on the *Mirror Principle*), the linearization of XP arguments in PG does not readily follow from any current linearization constraint on syntax. We have seen that the results obtained based on an in-depth study of the prosody and syntax of verbal phrases can provide considerable insight into what is otherwise a puzzling linearization constraint. At the heart of it is the discovery that PG is an Accentual Phrase language. In this language, as in other AP languages, a head and an XP complement typically form distinct accentual phases, and this, we have argued, has significant consequences for the linearization of XP arguments. Although the study began as a detailed study of the subordinate verbal phrase introduced by *ha*, we have seen that the results obtained can and probably must be extended to other subordinate clauses (like temporal subordinate clauses) and to root clauses. If this is correct, the conclusion that emerges is that the same prosodic constraint generalizes across verbal phrases in different clausal types. The resulting *Prosodic Closeness Requirement* in (56) and its related *phonological XP displacement mechanism* in (57) reveals a general tendency in the language to maximize the AP phrasing in the verbal domain. Namely, the language maximizes the parsing of material in the verbal domain, including its associated functional morphemes, as one AP, a tendency that is reinforced by the fact that the language is a pro-drop language, so that a verb and its associated functional morphemes can be the sole overt manifestation of an entire proposition. An important consequence of the tendency to maximize the phrasing of the verb phrase into one single AP (or to require, at the very least, prosodic adjacency) is that that prosody provides an important cue for identifying the verbal predicate phrase (referred to here as the VP*) in a language that is otherwise quite free in its word order.

Funding: This research was partially funded by an NSF Grant BCS-1917619.

Data Availability Statement: Not applicable.

Acknowledgments: I thank my Paraguayan consultants for their patience, my colleague Sun-Ah Jun for her assistance on the prosody part of this work, as well as two anonymous reviewers and the guest editor for useful comments.

Conflicts of Interest: The author declares no conflict of interest.

Appendix A. Why Is the Subordinator—*ha* Low in the Syntactic Structure?

A Conjecture

Given the distributional properties of the subordinator *ha* discussed in this paper, we have arrived at the conclusion that this subordinator is relatively low in the clausal structure; it is attached to the constituent formed by the VP* and its associated functional projections. The question is, why? Here we put forth the conjecture that it might be due to its genesis.

In present day PG, there are four homophonous *ha* morphemes.

(1) The nominalizer *ha*, which, in combination with a verbal constituent, denotes an individual with a generic activity or professional property, e.g., *monda* ‘steal’ + *ha* ‘thief’; *poro* (indef) + *juka* ‘kill’ + *ha* ‘assassin’, *pohano-ha* ‘doctor’, *mbo’e-ha* ‘teacher’. These nominalized forms have former, future, and frustrated past–future options, as well (60a–c). The sole argument of such nominal forms is located in the prenominal position and has a ‘possessor’ status, as can be appreciated with the third-person pronominal form *-i* (60d). See Ayala (1996, pp. 311–13), from whom we borrow the following examples.

- (60) a. *monda-ha-rã* ‘the one that will steal; a future thief’
- b. *monda-ha-re* ‘the one that stole; a former thief’
- c. *monda-ha-ra-ngue* ‘the one that was going to steal but didn’t’
- d. Mario /i-juka-ha-re ‘the one that killed Mario/him’

(2) The locative relativizer *ha+loc*, made up of *ha* plus a locative postposition, e.g., *hápe* in (61); see Ayala (1996, pp. 374–77). For nominal arguments, the relativizer is *-va*. Relative clauses merit their own independent study, and we will not say any more about them here.

- | | | | | | |
|------|------------------------------------------------------|------------------|----------------|----------|--------|
| (61) | A-há-ta | nde táva-pe, | oik-hápe | nde | ru. |
| | 1SG-go-PROSP | 2SG-village-LOC, | 3-live-LOC.REL | 2SG.POSS | father |
| | ‘I will go to the village, where your father lives.’ | | | | |

(3) The subordinator *ha*, which introduces clausal complements of attitude-embedding verbs, which we have discussed extensively in this paper.

(4) The coordinator *ha*, which can coordinate different kinds of constituents: clausal, nominal, and verbal constituents (briefly discussed further below).

There is a variety of sources that have been identified for finite complementizers in languages of the world. In Indo-European languages, the complementizer of finite complements is derived from a neuter form of the relative pronoun in a correlative clause, which itself is derived from a demonstrative form; see Roberts (2019) for an overview. In other languages, the complementizer appears to have derived from the verb ‘say’; see a.o. Koopman (1984) and Koopman and Sportiche (1989) for African languages and Knyazev (2016) for Altaic languages. Another well-known source for subordinators in many languages is the coordinating conjunction (Noonan 1985; Ross 2016, a.o.).

Thus, one plausible hypothesis is that the subordinator *ha* has as its ancestor the coordinator *ha*, a hypothesis that has not yet been considered for any Tupian language, as far as I know. More precisely, we may speculate that the subordinator *ha* in PG has its origins in the coordinator conjunction *ha* that optionally appears in a particular sequence-of-verbs construction, i.e., a case of VP coordination.

PG has a garden variety of sequence-of-verbs (see Velázquez-Castillo 2004). One of them has an optional conjunction *ha* and a temporally sequential interpretation. The

conjunction *ha* that appears in this case can be dropped, as shown by the vast majority of examples of this type in our *Mombe'u Corpus*, where this type of construction is abundant. Typically, the first verb is a directed motion verb, such as (o)ho 'go', (o)u 'come', (o)sẽ 'go.out', (oi)ke 'enter', (o)guahẽ 'arrive', and (o)mboja 'get close', and locational and positional verbs (o)pyta 'stay', (o)pu'ã 'get up', and (o)guapy 'sit'.³⁴ The event denoted by the second verb appears to be tightly connected to the event denoted by the first verb in that its initial point temporally coincides with the endpoint of the first event. We exemplify below with examples that are slightly adapted from our *Mombe'u Corpus*. The subject can be realized in either conjunct. Thus, (62a) has a counterpart where *hikuái* (3PL subject) is realized after the first verb *oho* (63a), and (62b) has a counterpart where the subject is realized after the second verb *heka* (63b). This shows that the structures in question are cases of phrasal (and not head) coordination. Furthermore, a temporal marker (like the prospective *-ta* or incipient *-pota*) may appear either on the first or second verb, or on both, as one might expect of a VP coordination that denotes a sequence of events; see (64).

- (62) a. O-ho (ha) o-guahẽ hikuái peteĩ yvyra guý-pe ...
 3-go (conj) 3-arrive 3PL.SUBJ one tree under-LOC
 'They went and arrived under a tree ...'
 b. O-ho karia'y (ha) o-heka tetigo
 3-go man (CONJ) 3-look.for witness.
 'The man went and looked for a witness.'
- (63) a. O-ho hikuái (ha) o-guahẽ peteĩ yvyra guý-pe
 b. O-ho (ha) o-heka karia'y tetigo
- (64) a. O-hó-(ta) ha o-guahẽ-(ta) ...
 b. O-ho-(pota) karia'y (ha) o-heka-(pota) tetigo

The construction has the hallmark property of clause-chaining, namely, non-ATB wh-extraction (see (65)), analyzed by Nonato (2014) as a case of VP coordination. Such VP coordinated structures may be assumed to have an asymmetric structure, as shown in (66).

- (65) a. Moõ-pa o-ho hikuái (ha) o-guahẽ-ta?
 where-Q 3-go 3PL.SUBJ (CONJ) 3-arrive-PROSP
 (Where will they go and arrive?)
 b. Máva-pe-pa o-ho karia'y (ha) o-heká-ta?
 who-DO-Q 3-go man (and) 3-look.for-PROSP
 (Who will the man go and look for?)

- (66) [VP VP [ha [VP]]]

One plausible hypothesis is that the VP coordinator *ha* that appears in the above construction has been co-opted to function as the subordinator *ha* by a process of prosodic reanalysis. The coordinator *ha* is typically stressless and parses with the VP material to its right. On the other hand, the subordinator *ha* is pitch accented and parses with the VP material to its left. Thus, in present-day PG, the two can be clearly distinguished prosodically, as well as syntactically.

Another plausible hypothesis is that the subordinator *ha* has its origins in the nominalizer *ha*, (e.g., Tonhauser (2006) on PG and Thomas (2014) on Mbya Guaraní). After all, nominal clausal complements are common among languages. Yet, the subordinator *ha* in present-day PG has no nominalizing or nominal properties. There is one morpho-

logical property that one might bring up as an argument in favor of the nominal status of *ha*, even if the structure has absolutely no vestige of nominality (raising the question of what it means for *ha* to be nominal in the first place). The subordinator *ha* can combine with the terminative *-kue*, giving rise to the subordinator *hague*, which specifies that the subordinating event has terminated with respect to the Eval time, namely the matrix event time. The terminative morpheme also appears with nouns to express a property that has ceased to exist, as in *che roga-kue* ('my former house'); see [Tonhauser \(2006\)](#) for extensive discussion. It is perhaps not surprising to find that the subordinator *ha* has coopted the terminative morpheme *-kue* to construct the past-shifted meaning in embedded clauses, giving rise to the complex subordinator *hague*. First, the language has no other morpheme to express such meaning unambiguously. Second, the subordinator *ha* combines with an event-denoting constituent, and if events and individuals belong to the same semantic category, then coopting *-kue* to form the complex subordinator *ha+gue* would be a natural extension from the semantic point of view. Interestingly, the language has not coopted the nominal forms *-hare*, *-harã*, or *harangue* as complex subordinators to express past, future, or future-in-the-past meanings; see (60a–c) above.

To summarize, we have considered two possible historical sources for the subordinator *ha*, both of which can account for its relatively low syntactic status in the clause. Only future historical research can settle definitively the origins of the subordinator *ha*.

Notes

- ¹ This generalization is based on 15 narratives in our *Mombe'u Corpus* and discussions with our consultants, who assisted us with their translations. More importantly, see the observations in Section 2.1.
- ² The language has postpositions, rather than prepositions. Some of the post-verbal subordinate conjunctions are derived from postpositions.
- ³ For simplicity's sake, in this article, we will abstract away from the distinction between vP (the projection where the external argument is introduced) and the VP.
- ⁴ The structure in (2a) is reminiscent of the structures excluded by the *Final-over-Final Condition* (FOFC) put forth by [Biberauer et al. \(2014\)](#), which states that a head-final phrase may not dominate a head-initial phrase within the same extended projection, as in (i). If the subordinator *ha* and V in (2a) are part of the same extended projection, then (2a) may be assumed to be a particular instantiation of (i) below. On the other hand, it appears that the FOFC (or whatever mechanism it is derived from) must allow for (2b).(i) *[_{XP} [_{YP} Y ZP] X]]
- ⁵ The male consultant was born and raised in Departamento Central and teaches middle and high school in a town close to Asunción. The female consultant is from Departamento de Paraguari and is a Guaraní teacher for various institutions.
- ⁶ We have glossed, translated, and annotated 15 stories of the *Mombe'u* volume, with the aid of the same two consultants mentioned in fn 5 (to appear on the website [Guaranicorpus.usc.edu](#)). Glosses follow the Leipzig Glossing Rules, with the following non-conventional abbreviations: CONJ 'conjunction', DES 'desiderative', DO 'direct object', fASP 'focalizing aspect', HAB 'habitual', INC 'incipient', MOD 'modal', POSS 'possessor', PRON 'pronoun', PROSP 'prospective', SUB 'subordinator', TEMP 'temporal', TOT 'totalitative'.
- ⁷ The intonational analysis of PG is based on work (in preparation) in collaboration with Sun-Ah Jun (UCLA).
- ⁸ In the case of the 1P subject and 2P object, the portmanteau prefix *-ro* is used (which belongs formally to the direct inflectional system, see [Zubizarreta and Pancheva \(2017a, 2017b\)](#)) In other words, in PG, 1P > 2P.
- ⁹ Guaraní roots are to a great extent stress final (the unmarked case), but when an unstressed suffix is attached to it, stress appears on the penultimate syllable of the root. Following the conventions of current Guaraní orthography, we mark the stress only when non-final (i.e., in cases of marked stress). In addition, when the stress-bearing syllable is nasal and marked as such, the stress is left orthographically unmarked.
- ¹⁰ Zubizarreta and Pancheva (op.cit.) propose that in the inverse structure, the Obj is promoted to the edge of vP, from where it has access to Per. It is argued there that the change in the initial consonant of the so-called triforme forms (*r* vs. *h*) is the morphophonological signature of such promotion, e.g., *Nde che-recha* ('you saw me') vs. *Che ro-hecha* ('I saw you'). [Rodríguez and Cabral \(2012\)](#) analyze such alternations in terms of a 'relational morpheme.'
- ¹¹ In our annotated *Mombe'u Corpus*, there are plenty of examples with subordinate complement clauses, but there is not one single case in which a subordinate complement clause (with or without the subordinator *ha*) precedes the Verb. PG appears to be different in this respect from other Tupian languages ([Rodríguez and Cabral op.cit.](#)). These authors state that in Tupian languages, NP complements precede the verb, subordinate complements precede main clauses and complements, and complement verbs precede main verbs. None of this is true for PG.

- 12 PG has null copular structures, so the fronted focused phrase in (8b–c) could potentially be analyzed as the negation of a silent copular verbal predicate (as in their English translation).
- 13 The verb (o)karu is a verb used for the noon-eating activity; I will sometimes translate it as ‘to lunch’ and sometimes as ‘to eat,’ depending on what sounds more natural.
- 14 Although movement, and in particular long-distance movement, is a property of phrases (and not of heads), the impossibility of movement does not imply that a constituent is not a phrase. There can be syntactic-extraneous reasons for why a phrase cannot move, e.g., the idiom ‘kick the can,’ as in ‘John kicked the can yesterday’ vs.* ‘The can was kick by John yesterday’ (with its idiomatic meaning ‘to die’). Similarly, the tight semantic relation between the verb and a qualitative Adverb in PG (e.g., -karu porā ‘eat well’)) appears to impose a strict closeness relation that cannot be altered by movement.
- 15 Note that a V-movement analysis cannot account for the entire distribution of such preverbal Adverbs. In fact, we know of no compelling evidence in favor of V-movement in PG.
- 16 The degree/intensifier bound morpheme -ite, as well as its long counterpart eterei, can only appear at the outer edge of the VP*, possibly due to semantic reasons.

- | | | | |
|-----|--------------------------------------------------------|------|-----------------------------------------------------------------------|
| (i) | O-karu porā-ite/eterei.
‘(S)he ate extremely well.’ | (ii) | Nd-o-karu porā-ité-i/etereí-ri.
(S)he did not eat extremely well.’ |
|-----|--------------------------------------------------------|------|-----------------------------------------------------------------------|

- Although we might think of -ite as a shortened version of eterei, Frutos (2016) argues that they are grammatically distinct: -ite is a (functional) head, whereas eterei is a (phrasal) adjunct. If this is indeed correct, it provides an indirect argument for the phrasal nature of the complex verbal forms under discussion and, in particular, for the phrasal nature of the verbal constituent with which negation combines, i.e., the constituent identified here as the VP*.
- 17 Prosp -ta also has a modal flavor of certainty/predictability; cf. Tonhauser (2006, 2011).
- 18 In the example below, from our Mombe’u Corpus, -ma is attached to the focalized embedded subject:

- | | | | | |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------|-----------------------|
| (i) | oi-moã la Mariskal Lópe ehérsito-ma
3-believe DEF.DET Mariscal López army-fASP
DEF.DET
‘... they believed that it was Mcal. López that was getting close to them already.’ | la o-ñembojá-va
3-get close-REL | hese
to.them | o-hó-vo.
3-go-GOAL |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------|-----------------------|

- 19 Note the frustrated meaning in the examples in (30), whether it is about an imminent futurate event or a past event. Such examples highlight a yet-unrecognized property of -ma, namely, that it appears to introduce a modal meaning, i.e., an intent or plan, which, in the presence of negation, ceases to exist at the reference time. It appears that -ma focalizes the negated part of the meaning in such cases.
- 20 Although less common, -ne, too, can appear to the right of a non-verbal (focused) constituent. Again, these are cases of marked/narrow focus, and we put them aside here.
- (i) O-ky kuehé-ne (epistemic)
3-rain yesterday-Mod
‘It might rain possibly tomorrow.’
- 21 Tonhauser (2006, 2011) analyzes kuri as a past temporal adverb. Pancheva and Zubizarreta (2020) argue against such an analysis and propose to analyze it as a Perfect.
- 22 This morpheme inflects for person/number: aína (1P), reína (2P), hína (3P) ... , in agreement with the logical subject, but nowadays many speakers use the 3P across the board.
- 23 The data in this and the next one are based entirely on our fieldwork.
- 24 The subordinate ha itself appears to play an important role in encoding the assertive nature of the propositional content from the point of view of the matrix attitudinal argument (generally, but not necessarily, the subject). When subordinator ha carries an emphatic accent, it strengthens the attitude holder’s commitment to the truth of the embedded proposition. We elaborate on this topic in forthcoming work.
- 25 We note further that -ma and -ne can also appear after subordinator ha (as an option) for all consulted speakers. On the other hand, the modals va’erā and vaicha may never appear after ha for none of the consulted speakers.
- 26 Of 14 native speakers that we consulted on the distribution of these morphemes between 2016 and 2021, only one was willing to accept the pre-ha position of such morphemes, although acknowledging that the post-ha position is the most natural one. We do not know at this point if this is idiolectal or dialectal.

- 27 PG has lexical stress, typically on the last syllable of a lexical item. However, because many suffixes do not have stress, stress can be on the penult or antepenult of a prosodic word. When a stressed suffix is added, stress shifts to the suffix, and when multiple suffixes have stress, stress shifts to the last stressed suffix (cf. *o-karú*, *o-karú-ta*, *o-karú-ta-ma*, *o-karu-pá*, *o-karu-pa-sé*.)
- 28 In a neutral focus condition, it is very rare for an AP in Korean to be longer than six syllables, and in those rare cases found in newspaper reading, it never exceeds nine syllables.
- 29 The only cases that we have found where the subordinator *ha* forms its own AP is if it is emphasized or if the preceding morpheme is emphasized. As in Korean, emphasis gives rise to AP-splitting.
- 30 What counts as ‘long’ still needs investigation, and in particular, whether length interacts with speech rate.
- 31 Nonetheless, there could be parsing-related factors, like early closure resolutions, that may play a role in favoring some orders with respect to others. This is yet to be investigated.
- 32 These include *o-mombe’u* ‘to tell’, *o-rovia* ‘to believe’, *o-hechakuaa* ‘to realize’, *o-mbyasy* ‘to regret’, and other emotive verbs.
- 33 In PG, the only case where the Object may be prosodically integrated into the VP* is when an inalienably possessed Object is located to the left of V and to the right of Infl (the cases of ‘promoted object’ mentioned in Section 2.1, and prosodically analyzed in Zubizarreta and Jun (2021).
- 34 Other types of coordinations (e.g., with transitive verbs) can also drop *ha*, but it requires an intonational break in between conjuncts.

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