Chapter 1 Prosody & the conjoint / disjoint alternation in Tshivenḓa

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Tshivenḓa (Guthrie S21) shares with other Southern Bantu languages a distinctive alternation in the form of the verb, termed the conjoint / disjoint alternation. I will present data from original fieldwork showing that, in contrast to other related languages, the Tshivenḓa conjoint and disjoint forms are not in complementary distribution by syntactic context, and instead show a distinctive three-way split in acceptability. I will also show that the same three-way split obtains in the frequency of utterance-internal penultimate lengthening. I discuss two possible analyses of this correlation, one in which the disjoint is a purely prosodic phenomenon and one in which the correlation is due to the influence of some third factor such as information structure.

1 Introduction

Tshivenḓa[1] shares with other Southern Bantu languages a distinctive morphological alternation in the form of the present tense prefix, commonly termed the **conjoint / disjoint alternation**. As shown below, the simple present is expressed either by the prefix /a-/ (termed the disjoint form) or /ø-/ (termed the conjoint).

(1) Tshivenḓa (Bantu; fieldwork)[2]

a. ndi (a) ḽá ṋemeṋeme
1sg DISJ eat termite
"I eat termite."

b. ndi *(a) ḽá
1s DISJ eat
"I eat."

In this paper, I will present new data from original fieldwork on Tshivenḓa which shows that the distribution of the disjoint prefix in that language shows

[1] Guthrie S21; ~1.3m speakers in South Africa (Limpopo Province) & Zimbabwe.

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a three-way distribution: It's obligatory in some contexts, impossible in others, and optional elsewhere. This contrasts with other languages with this alternation, e.g. isiZulu (Halpert 2015), where the conjoint and disjoint forms are typically in complementary distribution, i.e. no optionality is possible.

I will also present new data data on the prosody of Tshivenḓa, which strikingly shows the same three-way distribution. The prosodic phenomenon in question, penultimate lengthening, is common to many Bantu languages and applies to some large prosodic unit (typically taken to be the intonational phrase). In Tshivenḓa, the penultimate syllable of the utterance is always lengthened, but some utterance-internal penults may also be lengthened. I will demonstrate that the same contexts conditioning the three-way split in the disjoint prefix condition a similar split in penultimate lengthening: In those contexts in which the disjoint prefix is required, penultimate lengthening is frequent; in those contexts in which the prefix is impossible, penultimate lengthening is vanishingly rare; and in those contexts in which the prefix is optional seem to allow an intermediate frequency of lengthening.

I will argue that any analysis of these phenomena must capture the close relation between the conjoint / disjoint alternation and prosody. I will then present two possible analyses. In one, the disjoint prefix is a purely prosodic phenomenon in the sense that it is conditioned solely by the location of the verb within an intonational phrase.[3] In the other analysis, information structure plays the role of a 'third factor' conditioning both the disjoint prefix and the prosodic structure. I will discuss the consequences of each of these analyses and propose further research to help decide between these two options.

The structure of this paper is as follows. In section 2, I will discuss the disjoint alternation in Tshivenda, comparing and contrasting it with other Southern Bantu languages. I will then present in section 3 the results of a survey on the acceptability of conjoint and disjoint verb forms in different syntactic contexts, showing that there is a three-way split in the acceptability of this prefix by syntactic context. In section 4, I'll go on to discuss the results of a study on sentence-internal penultimate lengthening across a variety of syntactic contexts, showing that the same three-way split in the distribution emerges. In section 5 I will present two possible models of the relationship between disjoint marking and prosody which can account for this data. Finally, in section 6 I will discuss

[3] This first proposal closely mirrors one made in Cheng & Downing (2009) for isiZulu. However, Halpert (2015) has convincingly argued that the isiZulu case cannot be prosodic in nature and must have a deeply syntactic origin. The present study cannot currently decide between these two possibilities; it may be the case that a similar argument may be made for Tshivenḓa.

the advantages and disadvantages of these models and propose possible future work.

2 The conjoint / disjoint alternation

Southern Bantu languages frequently show an alternation in the form of the verb under certain tenses. For instance, in isiZulu, the simple present takes a prefix /ya-/ in some contexts, but is /ø-/ elsewhere:

(2) isiZulu (Bantu; Halpert 2015)

a. uMlungisi u- pheka iqanda
M. 3s- cook egg
"Mlungisi is cooking an egg."

b. * uMlungisi u- **ya**- pheka iqanda
M. 3s- YA- cook egg

(3) a. * uMlungisi u- pheka
M. 3s- cook

b. uMlungisi u- **ya**- pheka
M. 3s- YA- cook
"Mlungisi is cooking."

The short form of the verb (/ø-/) is traditionally termed the 'conjoint' form; the long form (/ya-/) is called the 'disjoint'. Halpert (2015) gives the following generalization for the distribution of these forms:

(4) **Conjoint-disjoint generalization (isiZulu)**:

a. **Conjoint (ø)**: appears when vP contains material (after A movement)

b. **Disjoint (*ya*)**: appears when vP does not contain material (after A movement)

Note two key properties of this generalization:

1. The forms of the verb are in complementary distribution.

2. The distribution is predictable based on syntactic context.

This seems to be the norm across Southern Bantu: The disjoint alternation is a deeply (morpho-)syntactic fact. In fact, in isiZulu and other languages the alternation appears in several different tense / aspect / polarity combinations with different morphological realizations, but with the same structural generalization governing which form is realized. In Tshivenḓa, by contrast, the disjoint alternation appears only in the simple present tense – all other tense / aspect / polarity combinations do not alternate.[4] Polous 1990 gives the following generalization about the distribution of the disjoint prefix:

(5) **Conjoint-disjoint generalization (Tshivenḓa, after Poulos)**:

a. The disjoint is available everywhere.

b. The conjoint is ungrammatical when the matrix verb is last in the sentence.[5]

[4] Creissels (1996) shows that Setswana, a closely-related language, shows tonal reflexes of the conjoint / disjoint alternation in some tenses. While I can confirm that no such alternation occurs in the present tense, I currently lack detailed tonal data on other tenses. However, Cassimjee (1992) does not note any anomalous tonal alternations, though she does note the present tense conjoint / disjoint distinction; while this is not conclusive, it supports the hypothesis that Tshivenda only shows this alternation in the present tense.

[5] Poulos' original generalization ignores the distinction between matrix and embedded verbs; in other Southern Bantu languages, the verb in a relative clause may take conjoint even when sentence-final. I lack detailed data on Tshivenḓa relative clauses; however, see section 6 for further discussion.

In contrast to isiZulu, this generalization does not place the conjoint & disjoint forms in complementary distribution – rather, it seems to suggest that the disjoint is the default form, with a specialized conjoint form required only in certain contexts. It also makes no reference to anything deeply syntactic in nature, but instead refers to the linear order of constituents. I will show that while the details of this generalization are inadequate – the disjoint is not in fact available everywhere, and the conjoint is ungrammatical in some cases where the verb is not last in the sentence – the underlying nature of this generalization is correct: The Tshivenḓa conjoint & disjoint forms are not in complementary distribution, and their distribution seems to be based on post-syntactic conditions.

3 Survey design and results

I conducted a pilot study on the conjoint / disjoint alternation at the University of Venḓa in Thohoyandou, Limpopo Province, South Africa. The study consisted of a short questionnaire asking for grammaticality ratings on a variety of sentences. The design of the survey was as follows:

- 8 conditions, varying what kind of material followed the verb.
- Each sentence was presented twice: once in the conjoint, once in the disjoint.
- A total of 56 test items were presented, plus 44 fillers (grammatical) / controls (ungrammatical) = 100 questions
- 12 native speakers of Tshivenḓa were asked to rate items from 1 (‘mistaken or incomplete’) to 5 (‘natural and complete’).

The conditions varied based on what material followed the verb:

1. **final** – the verb was sentence final.
2. **temporal** – the verb was followed by a temporal adverb (‘today’, ‘now’).
3. **locative** – followed by a locative adverb (‘at home’, ‘in the forest’).
4. **manner** – followed by a manner adverb (‘well’, ‘badly’).
5. **fhedzi** – followed by the focus-sensitive operator *fhedzi* (‘only’).
6. **secondary** – followed by a secondary predicate (‘go to the tree’).

7. **object** – transitive verb + *in situ* object.

8. **dislocated** – transitive verb + right-dislocated object.

A few of these conditions merit some further explanation. First, the **dislocated** condition included sentences in which the direct object was coreferenced by an object marker on the verb. In many Bantu languages, including Tshivenḓa, objects coreferenced in this manner are generally not in their base position inside the vP (Buell 2005). For instance, as shown in (6), it is possible to separate a coreferenced object from the verb with an adverb; this is not possible with a non-coreferenced object.

(6) a. Tshiṋoni tshi a dzhia (*zwíno) thanga
7.bird s.7 DSJ take now 9.seed
"The bird takes (*now) a seed."

b. Tshiṋoni tshi a í dzhi zwíno thanga
7.bird s.7 A 9.OBJ take now 9.seed
"The bird takes it now, the seed."

The **secondary** block included sentences in which the verb was followed by a clausal adjunct marked with the dependent prefix *tshi-* (Van Warmelo 1989):

(7) nḓou í (a) gidima í tshi ya daka -ni
9.elephant 9.SUBJ (DISJ) run 9.SUBJ DEP go forest LOC
"The elephant runs into the forest."

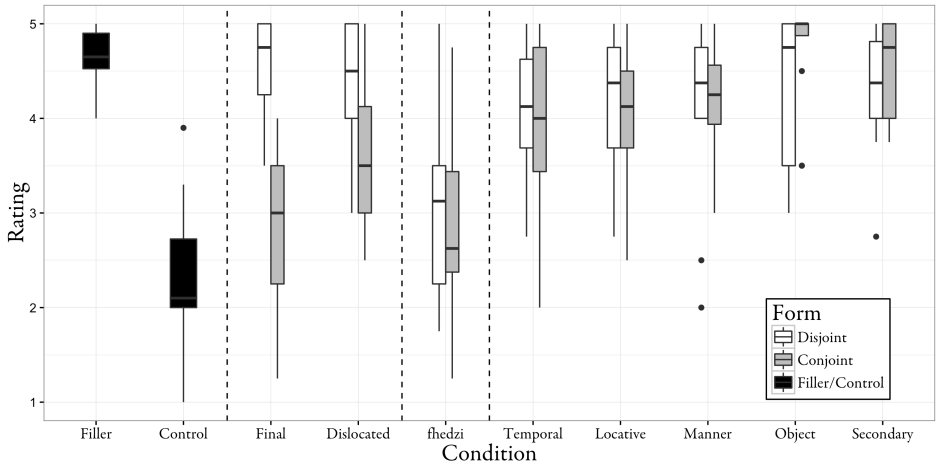
Finally, in the **fhedzi** condition the verb was followed by the focus-sensitive operator *fhedzi*, which may be roughly glossed as 'only'. The intention was for this to narrowly scope over the VP. However, the results show that speakers mostly rejected these sentences (regardless of which form the verb took), indicating that perhaps this narrow scope is difficult to arrive at pragmatically. This condition will be discarded in the analysis here.

3.1 Results and analysis

Table 1 shows the mean ratings per speaker for each condition, including controls and fillers.[6] The dashed lines separate out conditions into groups with similar behavior.

[6] This box-and-whisker plot should be read as follows: The dark horizontal mark indicates the median overall rating. The box extends out on either side to the edges of the 1st and 3rd quartiles,

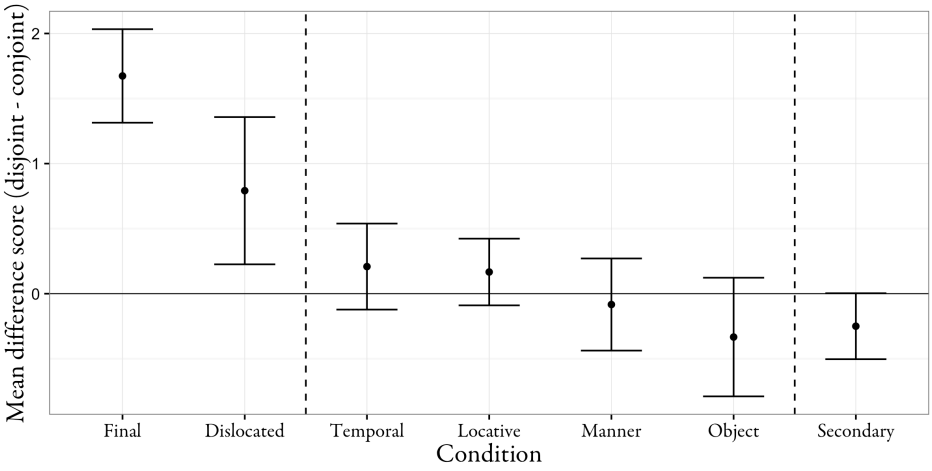
Table 1: Raw ratings of conjoint / disjoint forms, by condition



Within each condition, I calculated a by-speaker mean difference score between ratings given to the disjoint and to the conjoint sentences. In the resulting score, a positive value indicates that the speaker preferred the disjoint form of the verb, and a negative score that they preferred the conjoint. If the score is not significantly different from zero, then no preference can be assessed. In Table 2, error bars indicate 95% confidence intervals.

while the 'whiskers' extend out to 1.5 times the interquartile range; if no box or whisker is drawn, this indicates that the quartiles are at the median itself, i.e. that most responses are at the median. Speakers whose average response in that condition fell outside of the extent of the whiskers are regarded as outliers and plotted as individual points.

Table 2: Conjoint / disjoint preferences, by condition



From Table 2, it can be seen that the **final** and **dislocated** conditions show a significant[7] preference for the disjoint; the **adverb** and **object** conditions show no significant difference from zero; and only the **secondary** condition shows a significant preference for the conjoint. Together with the fact that the **adverb** and **object** conditions generally received ratings at ceiling, these results show clearly that there is a three-way split in the grammaticality of the conjoint and disjoint forms of the verb, summarized in Table 3.

Table 3: Conjoint/disjoint availability by context

Final	Disjoint
Dislocated object	Disjoint
Adverb	Either
In situ object	Either
Secondary predicate	Conjoint

Compare this distribution with the generalization stated in Poulos (1990). This generalization is proven false on two counts: First, the disjoint form is not in

[7] Significance was assessed at the 0.05 level using the Holm-Bonferroni correction for multiple comparisons.

fact available everywhere – in particular, when a secondary predicate follows the verb, the disjoint is ungrammatical. Second, the conjoint is ungrammatical in some situations where the verb is not last in the sentence. However, in at least some contexts, it is true that the conjoint and disjoint forms are equally acceptable. This contrasts with the situation in most other southern Bantu languages, particularly isiZulu, where the availability of the two forms is strictly determined by the syntactic context. I take this as evidence that the disjoint alternation in Tshivenḓa is a different class of phenomenon from the other Bantu languages. In particular, in the sections that follow, I will present evidence that the alternation is prosodically conditioned in Tshivenḓa, and that the optionality of the disjoint prefix corresponds precisely to optionality in the prosodic phrasing.

4 Penultimate lengthening

The same syntactic contexts which condition the availability of the conjoint and disjoint forms also differ systematically in their prosodic properties, specifically in the distribution of penultimate lengthening. Tshivenda does not have lexically contrastive vowel length, but lengthens the penultimate syllable of intonational phrases:

(8) a. ndó mbíndímédza **ludambwa꞉na**
1sg.PST destroy 11.dam
"I destroyed the dam."

b. ndó mbíndímédza ludambwana **namú꞉si**
1sg.PST destroy 11.dam today
"I destroyed the dam today."

Penultimate lengthening is common across the Bantu family (Hyman 2013). It is typically regarded as a phonological (rather than phonetic) lengthening on the grounds that it may have other effects on the suprasegmental phonology of the utterance, in particular on tone. Tshivenda shares with many other Bantu languages the property that contour tones may only occur on lengthened penults, which is typically taken to indicate that the lengthening adds a tone-bearing unit (e.g. a mora) to the target syllable.

The penult of the entire (declarative) utterance is always lengthened. However, there may be utterance-internal lengthening, as well. For example, in (9) *ludambwa꞉na* shows penultimate lengthening despite not being utterance-final.

(9) ndó mbíndímédza **ludambwa꞉na namú꞉si**
1sg.PST destroy 11.dam today
"I destroyed the dam today."

Comparing (9) and (8b), it can be seen that internal lengthening in this syntactic context is apparently variable. However, there is room for uncertainty about the source of this variability: If penultimate lengthening is associated with the intonational phrase level of prosodic structure, then the contrast between (9) and (8b) may indicate a contrast in intonational phrasing. Alternatively, one might propose that (8) still has an intonational phrase boundary after the verb, and what is variable is not the structure but the lengthening itself. If the variability lies in the prosodic structure formation, then one might expect to find some syntactic contexts in which the prosodic structure is not variable and internal lengthening happens 100% of the time. By contrast, if variability lies in the structure-sensitive phonological lengthening only, then even in syntactic contexts where the prosodic structure was fixed, one might expect lengthening to be variable. In fact, I will show below that the distribution of utterance-internal lengthening shows a complicated three-way distribution that indicates variability in both structure-sensitive phonology and prosodic structure formation.

I conducted a production study to determine the distribution of sentence-internal penultimate lengthening. The study comprised four syntactic contexts which varied in what material followed the verb: ***in situ* direct objects**, **dislocated direct objects**, intransitive verbs followed by **adverbs** (balanced across temporal, manner, and locative adverbials), and **secondary predicate** clauses. Several other syntactic contexts were also included and acted as controls for this study. Within each syntactic condition, sentences were balanced for other prosodic factors such as the length and lexical tone on the verb. 12 native speakers of Tshivenḓa were recorded with 3 repetitions per sentence; I'm reporting here on a subset of the data including only 5 speakers and 1 repetition.

After hand-coding all the syllables as long or short, I tabulated the percentage of tokens displaying utterance-internal penultimate lengthening on the verb within each syntactic condition:

Strikingly, the distributions also show a three-way split: Utterance-internal lengthening is common when only a dislocated object follows the verb; when an *in situ* object or an adverb follows the verb, lengthening is less common; and when only a secondary predicate follows the verb, lengthening is vanishingly rare.[8] Notably, the syntactic conditions on this distribution are the same as for

[8] All but one of the secondary predicate cases showing internal lengthening come from the same

Table 4: Percentage of tokens with internal penultimate lengthening

(Sentence-final)	(100%)
Dislocated object	60%
Adverb	25%
In situ object	15%
Secondary predicate	5%

the conjoint / disjoint alternation: That is, verbs followed by dislocated objects pattern the same as sentence-final verbs; *in situ* objects and adverbs pattern together, and secondary predicates pattern a third way.[9] This overlap suggests a common origin for both phenomena; in the next section, I will outline a model of Tshivenda prosody that explains the commonalities.

5 Analysis

We have seen that both the conjoint / disjoint alternation and sentence-internal penultimate lengthening show a three-way split in their distributions, and that the syntactic conditions underlying this split pattern alike between the two phenomena. I will first develop a model that can account for the three-way split in penultimate lengthening. I will then discuss two possible ways that the correlation between the prosody and the disjoint prefix can be explained. In one, the disjoint prefix is directly conditioned by the prosodic structure; in the other, a 'third factor' is introduced which accounts for the variability in both prosodic phrasing and disjoint marking.

5.1 Penultimate lengthening and prosodic variability

This distribution is challenging to explain under a model of prosody in which the structure-sensitive phonological marking is in one-to-one correspondence with the prosodic structure. There are two challenging aspects to this distribution: The first is that the internal marking is sometimes categorically *absent* (the secondary predicate case), but is never categorically *present*. The second is that some

speaker, who shows many signs of list intonation in general.

[9] Such a correlation between prosody and disjoint marking has been noted before; see, for instance: (an)**derSpuy2013**; **ChengDowning2012**; Buell (2005) on Zulu; **Devos2008** on Makwe. I'm grateful to an anonymous reviewer for bringing these references to my attention.

contexts seem to show an intermediate frequency of lengthening. This first property can be captured by proposing that intonational phrase is *variably* marked by penultimate lengthening, so that, even in contexts where the verb is always final in an intonational phrase, the lengthening will not always be present. This second property can be captured by specifying that these contexts are not actually uniform, but that differences in the interpretation of *in situ* objects and adverbs changes whether they are prosodically grouped with the verb or not. Information structure (e.g. focus or givenness) is the most likely factor at play; since the present study did not control information structure, these differences might appear as apparently random variation depending on what implicit context subjects assign to the sentence.

To spell out this proposal in more detail:

- I will assume an indirect reference theory of prosody (Selkirk 2011), in which prosody is split into two pieces: prosodic structure building and structure-sensitive phonology.
- In particular, I will assume that each utterance has an abstract prosodic structure which may or may not be marked in the phonology by e.g. penultimate lengthening. That is, it is the likelihood of marking, not the presence or absence, that indicates a boundary. (Elfner 2016)
- I will further assume that recursive prosodic structures are possible and that structure-sensitive phonology can make reference to maximal and non-maximal recursive phrases (Ito & Mester 2012).

I propose that penultimate lengthening is controlled by two rules:

(10) **Penultimate lengthening rules**:
  a. Always lengthen the penultimate syllable of a maximal ɩP.
  b. Variably lengthen the penultimate syllable of a non-maximal ɩP.

Consider the dislocated object case. I propose that these sentences have a prosodic structure like the following:[10]

(11) $(_{\text{ɩ-Max}}$ $(_{\text{ɩ}}$ ndó lú **mbíndímé(:)dza** $)_{\text{ɩ}}$ **ludambwa:na** $)_{\text{ɩ-Max}}$
  1sg.PST 11.OBJ destroy 11.dam
  "I destroyed the dam."

[10] Space does not permit me to include a full analysis of how the prosodic structures here are generated, but I assume a constraint-based analysis along the lines of MATCH Theory (Selkirk 2011).

- The object *ludambwana* is final in a maximal ɩP and so is always lengthened.
- The verb *mbíndímédza* is final in a non-maximal ɩP and so is variably lengthened.

→ In my data: The verb is lengthened >50% of the time.

Consider next the secondary predicate case. I propose that these sentences have a prosodic structure like the following:

(12) $(_{\text{ɩ-Max}}$ ndi gidima $(_{\text{ɩ}}$ ndi tshi ya háyá:ni $)_{\text{ɩ}})_{\text{ɩ-Max}}$
1sg run 1sg DEP go home.LOC
"I run home."

- The goal *hayani* is final in a maximal ɩP and so is always lengthened.
- The main verb *gidima* isn't final in any ɩP, and so is never lengthened.

→ In my data: The verb is lengthened <5% of the time.

Finally, consider the other cases – adverbs and *in situ* objects. Here, I will propose that these sentences may be assigned on of two possible structures. While I will remain neutral on what conditions each of these structures, information structural factors such as focus or givenness seems likely; the experiment presented here did not control for these factors, and so I will treat the choice between the two structures as essentially variable.

(13) a. $(_{\text{ɩ-Max}}$ $(_{\text{ɩ}}$ ndo ṅamai(:)la $)_{\text{ɩ}}$ n̰amu:si $)_{\text{ɩ-Max}}$
b. $(_{\text{ɩ-Max}}$ ndó ṅámáíla n̰amú:si $)_{\text{ɩ-Max}}$
1sg.PST stagger today
"I staggered today."

- Under both prosodic structures, the adverb *n̰amusi* is final in a maximal ɩP and is lengthened.
- Under (13a) there is no non-maximal ɩP and so no variable lengthening.
- Under (13b) the verb is final in a non-maximal ɩP and is variably lengthened.

- One thus expects sentence-internal lengthening to occur less frequently than with dislocated objects, but more frequently than with secondary predicates.

→ In my data: The verb is lengthened ~20% of the time.

Thus, one can understand the three-way split in penultimate lengthening as arising from the combination of variation in prosodic structure (probably conditioned by information structural factors) with a variable structure-sensitive phonology rule.[11]

5.2 Explaining the conjoint / disjoint alternation

If the prosodic structures proposed above are correct, then the following relationship between intonational phrases, lengthening, and disjoint marking obtains:

Table 5: Summary of prosody & verb form relationship

Condition	Last in ιP?	Lengthened?	Form?
Dislocated obj	Always	Frequently	Disjoint
Adverb, *in situ* obj	Sometimes	Sometimes	Variable
Secondary predicate	Never	Rarely	Conjoint

It seems desirable to explain why disjoint marking should track the prosodic structure so closely. There are at least two possible analyses compatible with the data presented here. The first is what I will term the **prosodic disjoint** analysis, in which disjoint marking is taken to be a direct consequence of the prosodic structure. More specifically, Tshivenḓa disjoint marking would obey the following generalization:

(14) **Conjoint / disjoint generalization (Tshivenḓa):**

a. **Disjoint (/a-/)**: appears when the verb is last in an ιP.

b. **Conjoint (/ø-/)**: appears elsewhere.

The prosodic disjoint analysis represents a significant break from previous scholarship on Southern Bantu languages (see, for instance, Buell 2005; Cheng & Downing 2009), which have typically analyzed disjoint marking as resulting

[11] If this analysis is correct, we should see corresponding tonal effects; space constraints will not permit a discussion of Tshivenḓa tone-spreading phenomena here.

from a combination of syntactic- and information-structural factors. The **structural disjoint** analysis, then, would propose that the correlations reported in table 5 are the result of a 'third factor': Insofar as syntax and information structure are capable of influencing both the prosody and the verb form, we should expect these factors to be correlated with each other. In this analysis, there is no direct link between disjoint marking and prosodic structure at all.

The present study is not capable of distinguishing between these options. In the next section, I will discuss some of the predictions of each of these analyses and what work will be necessary to decide between them.

6 Conclusions

I have shown here that the conjoint / disjoint alternation in Tshivenḓa behaves quite differently from the parallel alternation in other Southern Bantu languages. In particular, while other Southern Bantu languages typically show the disjoint and conjoint forms in complementary distribution, in Tshivenḓa there is a class of syntactic contexts in which the disjoint prefix is apparently optional. Furthermore, I've shown that the three-way split one see in the conjoint / disjoint alternation precisely mirrors a similar three-way split in the distribution of penultimate lengthening. I've proposed two possible analyses that can capture this parallel: One in which disjoint marking is directly determined by the prosody, and one in which it is indirectly linked to prosody by way of some other common factor which influences both.

Both analyses presented here make at least two strong language-internal predictions which I do not yet have the data to test. First, it predicts that conjoint-form verbs should never be lengthened, regardless of syntactic context; conversely, it predicts that disjoint-form verbs should be lengthened ~60% of the time whenever they're not sentence-final. This prediction remains to be tested.

The prosodic disjoint analysis allows for a parsimonious description of the Tshivenḓa conjoint / disjoint facts: Instead of a three-way split based on the syntax, we can state the generalization in terms of a two-way split based on the prosody. This analysis seems particularly appropriate for Tshivenḓa, in comparison to the other Southern Bantu languages, in that the disjoint prefix is much more limited in distribution in Tshivenḓa than elsewhere: The alternation occurs only in the simple present (/ habitual) tense, and is only ever between /a-/ and /ø-/, rather than between two contentful morphemes. One might imagine, then, that the Tshivenḓa /a-/ prefix is really just the present tense morpheme, and that this morpheme undergoes a deletion process in some contexts. This would help

us understand why no /a-/ prefix appears when any other overt tense morphology is present. More work will be required to determine if this specific analysis is the correct one.

The structural disjoint analysis, by contrast, requires that we understand dislocated objects, some *in situ* objects, and some adverbs to form a natural class, in opposition to secondary predicates. As noted above, the most likely factor at play here is information structure; furthermore, in order to explain the prosodic facts, we need this factor regardless of which analysis of the disjoint we pursue. If the determining factor is indeed related to information structure, then we predict that dislocated objects will pattern uniformly in this respect; this is perhaps unsurprising, given that dislocation itself is an information-structural process related to backgrounding the object (see Buell 2005, among others). We would then predict that *in situ* objects and adverbs pattern variably with respect to this factor — that is, Tshivenḓa apparently allows for such elements to be backgrounded without overt syntactic dislocation. Finally, we predict that secondary predicates will all pattern uniformly differently from dislocated objects in this respect — presumably meaning that they can never be backgrounded or otherwise marked as 'given'. This is perhaps the most surprising prediction of this analysis, and yet still seems well within the range of possibility.

Deciding between these two analyses, then, will require considerable further work. In particular, the studies presented here did not treat information structure as a factor in any way; it will be essential to control for this in future studies. Optimally, this would involve both a judgment task and a production task, each of which carefully controlled the discourse context for each test item. I leave such a study for future research.

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